SEQUENCE LISTING

<110> Agarwal, Pankaj
Lee, Judithann M.
Smith, Randall F.
White, John R.

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<151> 2000-06-22

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acaggctccc ctcctgtttg gatggatgac ttagtaaagg gtttgctctc tgttgaagac 300
atgaacgtag ttgttgttga ttggaatcga ggagctacaa ctttaatata tacccatgcc 360
tctagtaaga ccagaaaagt agccatggtc ttgaaggaat ttattgacca gatgttggca 420
gaaggagctt ctcttgatga catttacatg atcggagtaa gtctaggagc ccacatatct 480
gggtttgttg gagagatgta cgatggatgg ctggggagaa ttacaggcct cgaccctgca 540
ggccctttat tcaacgggaa acctcaccaa gacagattag atcccagtga tgcgcagttt 600
gttgatgtca tccattccga cactgatgca ctgggctaca aggagccatt aggaaacata 660
gacttctacc caaatggagg attggatcaa cctggctgcc ccaaaacaat attgggagga 720
tttcagtatt ttaaatgtga ccaccagagg tctgtatacc tgtacctgtc ttccctgaga 780
gagagctgca ccatcactgc gtatccctgt gactcctacc aggattatag gaatggcaag 840
tgtgtcagct gcggcacgtc acaaaaagag tcctgtcccc ttctgggcta ttatgctgat 900
aattggaaag accatctaag ggggaaagat cctccaatga cgaaggcatt ctttgacaca 960
gctgaggaga gcccattctg catgtatcat tactttgtgg atattataac atgggacaag 1020
aatgtaagaa gaggggacat taccatcaaa ttgagagaca aagctggaaa cacccacaga 1080
tccaaaatca tcagtaatga acccaccaca tttcagaaat atcaccaagt gagtctactt 1140
gcaagattta atcaagatct ggataaagtg gctgcaattt ccttgatgtt ctctacagga 1200
tctctaatag gcccaaggta caagctcagg attctccgaa tgaagttaag gtcccttgcc 1260
catccggaga ggcctcagct gtgtcggtat gatcttgtcc tgatggaaaa cgttgaaaca 1320
gtcttccaac ctattctttg cccagagttg cagttgtaa 1359

<210> 16
<211> 1353
<212> DNA
<213> Homo sapiens

<400> 16
atggggctcc ggagccacca cctcagcctg ggccttctgc ttctgtttct actccctgca 60
gagtgcctgg gagctgaggg ccggctggct ctcaagctgt tccgtgacct ctttgccaac 120
tacacaagtg ccctgagacc tgtggcagac acagaccaga ctctgaatgt gaccctggag 180
gtgacactgt cccagatcat cgacatggat gaacggaacc aggtgctgac cctgtatctg 240
tggatacggc aggagtggac agatgcctac ctacgatggg accccaatgc ctatggtggc 300
ctggatgcca tccgcatccc cagcagtctt gtgtggcggc cagacatcgt actctataac 360
aaagccgacg cgcagcctcc aggttccgcc agcaccaacg tggtcctgcg ccacgatggc 420
gccgtgcgct gggacgcgcc ggccatcacg cgcagctcgt gccgcgtgga tgtagcagcc 480
ttcccgttcg acgcccagca ctgcggcctg acgttcggct cctggactca cggcgggcac 540
caactggatg tgcggccgcg cggcgctgca gccagcctgg cggacttcgt ggagaacgtg 600
gagtggcgcg tgctgggcat gccggcgcgg cggcgcgtgc tcacctacgg ctgctgctcc 660

gagccctacc ccgacgtcac cttcacgctg ctgctgcgcc gccgcgccgc cgcctacgtg 720
tgcaacctgc tgctgccctg cgtgctcatc tcgctgcttg cgccgctcgc cttccacctg 780
cctgccgact caggcgagaa ggtgtcgctg ggcgtcaccg tgctgctggc gctcaccgtc 840
ttccagttgc tgctggccga gagcatgcca ccggccgaga gcgtgccgct catcgggaag 900
tactacatgg ccactatgac catggtcaca ttctcaacag cactcaccat ccttatcatg 960
aacctgcatt actgtggtcc cagtgtccgc ccagtgccag cctgggctag ggccctcctg 1020
ctgggacacc tggcacgggg cctgtgcgtg cgggaaagag gggagccctg tgggcagtcc 1080
aggccacctg agttatctcc tagcccccag tcgcctgaag gaggggctgg ccccccagcg 1140
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accattgcca ataccttccg cagccaccga gctgcccagc gctgccatga ggactggaag 1260
cgcctggccc gtgtgatgga ccgcttcttc ctggccatct tcttctccat ggccctggtc 1320
atgagcctcc tggtgctggt gcaggccctg tga 1353

<210> 17
<211> 768
<212> DNA
<213> Homo sapiens

<400> 17
atggttaagg gtgagaaagg ccccaagggc aagaagatca ccctcaaggt ggccaggaat 60
tgcatcaaaa tcacttttga tgggaaaaag cgccttgact tgagcaagat gggaattacc 120
accttcccca agtgtattct gcgccttagt gacatggacg agctggacct tagccggaat 180
cttatcagga agatccctga ctccatctcc aagttccaga acctccggtg gctggacctg 240
cacagcaact acatagacaa gctgcctgag tccattggcc agatgaccag cctgctctac 300
ctcaacgtca gcaacaaccg gctgaccagc aacgggctgc ccgtggagct gaagcaactc 360
aagaacatcc gcgctgtgaa cctaggcttg aaccacctgg acagcgtgcc caccacactg 420
ggggccctga aggagctcca cgaggtaggg ctccatgaca acctactgaa caacatcccc 480
gtgagcatct ccaagctccc caagctgaaa aagctcaaca taaagcggaa ccccttcca 540
aagccaggtg agtcggaaat attcatagac tccatcagga ggctggagaa cttgtatgtt 600
gtggaggaga aggatctgtg tgcggcttgc ctgagaaaat gccaaaacgc ccgggacaac 660
ctgaatagaa tcaagaacat ggccacgacg acaccgagaa agaccatctt tcccaatctg 720
atctcaccca attccatggc caaggactcc tgggaagact ggaggtga 768

<210> 18
<211> 645
<212> DNA
<213> Homo sapiens

<400> 18
atgcaggcag gaactcagtc aacgcatgag tctctgaagc ctcagagggt acaatttcag 60

tcccgaaatt ttcacaacat tttgcaatgg cagcctggga gggcacttac tggcaacagc 120
agtgtctatt ttgtgcagta caaaatatat ggacagagac aatggaaaaa taaagaagac 180
tgttggggta ctcaagaact ctcttgtgac cttaccagtg aaacctcaga catacaggaa 240
ccttattacg ggagggtgag ggcggcctcg gctgggagct actcagaatg gagcatgacg 300
ccgcggttca ctccctggtg ggaaacaaaa atagatcctc cagtcatgaa tataacccaa 360
gtcaatggct ctttgttggt aattctccat gctccaaatt taccatatag ataccaaaag 420
gaaaaaaatg tatctataga agattactat gaactactat accgagtttt tataattaac 480
aattcactag aaaaggagca aaaggtttat gaaggggctc acagagcggt tgaaattgaa 540
gctctaacac cacactccag ctactgtgta gtggctgaaa tatatcagcc catgttagac 600
agaagaagtc agagaagtga agagagatgt gtggaaattc catga 645

<210> 19
<211> 696
<212> DNA
<213> Homo sapiens

<400> 19
atgatgccta aacattgctt tctaggcttc ctcatcagtt tcttccttac tggtgtagca 60
ggaactcagt caacgcatga gtctctgaag cctcagaggg tacaatttca gtcccgaaat 120
tttcacaaca ttttgcaatg gcagcctggg agggcactta ctggcaacag cagtgtctat 180
tttgtgcagt acaaaatata tggacagaga caatggaaaa ataaagaaga ctgttggggt 240
actcaagaac tctcttgtga ccttaccagt gaaacctcag acatacagga accttattac 300
gggagggtga gggcggcctc ggctgggagc tactcagaat ggagcatgac gccgcggttc 360
actccctggt gggaaacaaa aatagatcct ccagtcatga atataaccca agtcaatggc 420
tctttgttgg taattctcca tgctccaaat ttaccatata gataccaaaa ggaaaaaaat 480
gtatctatag aagattacta tgaactacta taccgagttt ttataattaa caattcacta 540
gaaaaggagc aaaaggttta tgaaggggct cacagagcgg ttgaaattga agctctaaca 600
ccacactcca gctactgtgt agtggctgaa atatatcagc ccatgttaga cagaagaagt 660
cagagaagtg aagagagatg tgtggaaatt ccatga 696

<210> 20
<211> 792
<212> DNA
<213> Homo sapiens

<400> 20
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ggaactcagt caacgcatga gtctctgaag cctcagaggg tacaatttca gtcccgaaat 120
tttcacaaca ttttgcaatg gcagcctggg agggcactta ctggcaacag cagtgtctat 180
tttgtgcagt acaaaatcat gttctcatgc agcatgaaaa gctctcacca gaagccaagt 240

ggatgctggc agcacatttc ttgtaacttc ccaggctgca gaacattggc taaatatgga 300
cagagacaat ggaaaaataa agaagactgt tggggtactc aagaactctc ttgtgacctt 360
accagtgaaa cctcagacat acaggaacct tattacggga gggtgagggc ggcctcggct 420
gggagctact cagaatggag catgacgccg cggttcactc cctggtggga aacaaaaata 480
gatcctccag tcatgaatat aacccaagtc aatggctctt tgttggtaat tctccatgct 540
ccaaatttac catatagata ccaaaaggaa aaaaatgtat ctatagaaga ttactatgaa 600
ctactatacc gagtttttat aattaacaat tcactagaaa aggagcaaaa ggtttatgaa 660
ggggctcaca gagcggttga aattgaagct ctaacaccac actccagcta ctgtgtagtg 720
gctgaaatat atcagcccat gttagacaga agaagtcaga gaagtgaaga gagatgtgtg 780
gaaattccat ga 792

<210> 21
<211> 780
<212> DNA
<213> Homo sapiens

<400> 21
atgtatgtat tatctccagt ggaatttata attctacaac ttttatttat tcaggccatt 60
tccagcagtt taaaaggttt cctttcagct atgagactgg ctcatagagg ctgtaatgtt 120
gatacaccag tttcaacgct cacaccagtg aagacttcag aatttgaaaa ctttaaaact 180
aaaatggtta tcacatccaa aaaagactat cctctaagta agaattttcc atattccttg 240
gaacatcttc agacttctta ctgtgggctt gtccgagttg atatgcgtat gctttgctta 300
aaaagcctta ggaaattaga cttgagtcac aaccatataa aaaagcttcc agctacaatt 360
ggagacctca tacaccttca agaacttaac ctgaatgaca atcacttgga gtcatttagt 420
gtagccttgt gtcattctac actccagaag tcacttcgga gtttggacct cagcaagaac 480
aaaatcaagg cactccctgt gcagttttgc cagctccagg aacttaagaa tttaaaactt 540
gacgataatg aattgattca atttccttgc aagataggac aactaataaa ccttcgcttt 600
ttgtcagcag ctcgaaataa gcttccattt ttgcctagtg aatttagaaa tttatccctt 660
gaatacttgg atctttttgg aaatactttt gaacaaccaa aagtccttcc agtaataaag 720
ctgcaagcac cattaacttt attggaatct tctgcacgaa ccatattaca taataggtaa 780

<210> 22
<211> 1251
<212> DNA
<213> Homo sapiens

<400> 22
atgaagctac actgtgaggt ggaggtgatc agccggcact tgcccgcctt ggggcttagg 60
aaccggggca agggcgtccg agccgtgttg agcctctgtc agcagacttc caggagtcag 120

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ccgccggtcc gagccttcct gctcatctcc accctgaagg acaagcgcgg gacccgctat 180
gagctaaggg agaacattga gcaattcttc accaaatttg tagatgaggg gaaagccact 240
gttcggttaa aggagcctcc tgtggatatc tgtctaagtà aggccatttc cagcagttta 300
aaaggtttcc tttcagctat gagactggct catagaggct gtaatgttga tacaccagtt 360
tcaacgctca caccagtgaa gacttcagaa tttgaaaact ttaaaactaa aatggttatc 420
acatccaaaa aagactatcc tctaagtaag aattttccat attccttgga acatcttcag 480
acttcttact gtgggcttgt ccgagttgat atgcgtatgc tttgcttaaa aagccttagg 540
aaattagact tgagtcacaa ccatataaaa aagcttccag ctacaattgg agacctcata 600
caccttcaag aacttaacct gaatgacaat cacttggagt catttagtgt agccttgtgt 660
cattctacac tccagaagtc acttcggagt ttggacctca gcaagaacaa aatcaaggca 720
ctccctgtgc agttttgcca gctccaggaa cttaagaatt taaaacttga cgataatgaa 780
ttgattcaat ttccttgcaa gataggacaa ctaataaacc ttcgcttttt gtcagcagct 840
cgaaataagc ttccattttt gcctagtgaa tttagaaatt tatcccttga atacttggat 900
ctttttggaa atacttttga acaaccaaaa gtccttccag taataaagct gcaagcacca 960
ttaactttat tggaatcttc tgcacgaacc atattacata ataggaatag gattccatat 1020
ggctctcata tcattccatt ccatctctgc caagatttgg ataccgcaaa aatttgtgtt 1080
tgtggaagat tctgtctgaa ctctttcatt caaggaacta ctaccatgaa tctgcattct 1140
gttgcccaca ctgtggtctt agtagataat ttgggtggta ctgaagcacc tattatctct 1200
tatttctgtt ctctaggctg ttatgttaat tcctctgata tgttaaagta a          1251
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<210> 23
<211> 461
<212> PRT
<213> Homo sapiens

<400> 23

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Met Leu Gly Ile Trp Ile Val Ala Phe Leu Phe Phe Gly Thr Ser Arg
 1               5                  10                  15
Gly Lys Glu Val Cys Tyr Glu Arg Leu Gly Cys Phe Lys Asp Gly Leu
            20                  25                  30
Pro Trp Thr Arg Thr Phe Ser Thr Glu Leu Val Gly Leu Pro Trp Ser
        35                  40                  45
Pro Glu Lys Ile Asn Thr Arg Phe Leu Leu Tyr Thr Ile His Asn Pro
    50                  55                  60
Asn Ala Tyr Gln Glu Ile Ser Ala Val Asn Ser Ser Thr Ile Gln Ala
65                  70                  75                  80
Ser Tyr Phe Gly Thr Asp Lys Ile Thr Arg Ile Asn Ile Ala Gly Trp
                85                  90                  95
Lys Thr Asp Gly Lys Trp Gln Arg Asp Met Cys Asn Val Leu Leu Gln
            100                 105                 110
```

Leu Glu Asp Ile Asn Cys Ile Asn Leu Asp Trp Ile Asn Gly Ser Arg
115 120 125
Glu Tyr Ile His Ala Val Asn Asn Leu Arg Val Val Gly Ala Glu Val
130 135 140
Ala Tyr Phe Ile Asp Val Leu Met Lys Lys Phe Glu Tyr Ser Pro Ser
145 150 155 160
Lys Val His Leu Ile Gly His Ser Leu Gly Ala His Leu Ala Gly Glu
165 170 175
Ala Gly Ser Arg Ile Pro Gly Leu Gly Arg Ile Thr Gly Leu Asp Pro
180 185 190
Ala Gly Pro Phe Phe His Asn Thr Pro Lys Glu Val Arg Leu Asp Pro
195 200 205
Ser Asp Ala Asn Phe Val Asp Val Ile His Thr Asn Ala Ala Arg Ile
210 215 220
Leu Phe Glu Leu Gly Val Gly Thr Ile Asp Ala Cys Gly His Leu Asp
225 230 235 240
Phe Tyr Pro Asn Gly Gly Lys His Met Pro Gly Cys Glu Asp Leu Ile
245 250 255
Thr Pro Leu Leu Lys Phe Asn Phe Asn Ala Tyr Lys Lys Glu Met Ala
260 265 270
Ser Phe Phe Asp Cys Asn His Ala Arg Ser Tyr Gln Phe Tyr Ala Glu
275 280 285
Ser Ile Leu Asn Pro Asp Ala Phe Ile Ala Tyr Pro Cys Arg Ser Tyr
290 295 300
Thr Ser Phe Lys Ala Gly Thr Cys Val Gly Cys Ala Asp Leu Leu His
305 310 315 320
Arg Ile Asp Lys Ile Gly Ser His Thr Ser His Val Phe Leu Thr Leu
325 330 335
Ser Leu Pro Phe Leu Leu Val Ser Leu Tyr Leu Gly Trp Arg His Lys
340 345 350
Leu Ser Val Lys Leu Ser Gly Ser Glu Val Thr Gln Gly Thr Val Phe
355 360 365
Leu Arg Val Gly Gly Ala Val Arg Lys Thr Gly Glu Phe Ala Ile Val
370 375 380
Ser Gly Lys Leu Glu Pro Gly Met Thr Tyr Thr Lys Leu Ile Asp Ala
385 390 395 400
Asp Val Asn Val Gly Asn Ile Thr Ser Val Gln Phe Ile Trp Lys Lys
405 410 415
His Leu Phe Glu Asp Ser Gln Asn Lys Leu Gly Ala Glu Met Val Ile
420 425 430

```
Asn Thr Ser Gly Lys Tyr Gly Tyr Lys Ser Thr Phe Cys Ser Gln Asp
        435                 440                 445
Ile Met Gly Pro Asn Ile Leu Gln Asn Leu Lys Pro Cys
    450                 455                 460
```

<210> 24
<211> 308
<212> PRT
<213> Homo sapiens

<400> 24

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Met Pro Phe Leu Gln Leu Lys Gly Arg Ala Thr Pro Pro Ser Trp Arg
 1               5                  10                  15
His Asp Ser Arg Ser Leu Val His Leu Leu Asp Gly Lys Glu Gly Val
            20                  25                  30
Trp Asp Thr Thr Gly Tyr Ala Leu Gly Ser Arg Glu Ser Leu Asn Pro
        35                  40                  45
Asp Met Gly Ile Gly Asp Pro His Gly His Ser Thr Val His Thr Arg
    50                  55                  60
Glu Ala Gly Thr Ala Cys Pro Leu Gln Leu Leu Gly Ala Arg Glu Ala
65                  70                  75                  80
Ser Leu Leu Ala Cys Gly Ile Cys Gln Ala Ser Gly Gln Ile Phe Ile
                85                  90                  95
Thr Gln Thr Leu Gly Ile Lys Gly Tyr Arg Thr Val Val Ala Leu Asp
            100                 105                 110
Lys Val Pro Glu Asp Val Gln Glu Tyr Ser Trp Tyr Trp Gly Ala Asn
        115                 120                 125
Asp Ser Ala Gly Asn Met Ile Ile Ser His Lys Pro Pro Ser Ala Gln
    130                 135                 140
Gln Pro Gly Pro Met Tyr Thr Gly Arg Glu Arg Val Asn Arg Glu Gly
145                 150                 155                 160
Ser Leu Leu Ile Arg Pro Thr Ala Leu Asn Asp Thr Gly Asn Tyr Thr
                165                 170                 175
Val Arg Val Val Ala Gly Asn Glu Thr Gln Arg Ala Thr Gly Trp Leu
            180                 185                 190
Glu Val Leu Asp Gly Pro Asp Tyr Val Leu Leu Arg Ser Asn Pro Asp
        195                 200                 205
Asp Phe Asn Gly Ile Val Thr Ala Glu Ile Gly Ser Gln Val Glu Met
    210                 215                 220
```

```
Glu Cys Ile Cys Tyr Ser Phe Leu Asp Leu Lys Tyr His Trp Ile His
225                 230                 235                 240
Asn Gly Ser Leu Leu Asn Phe Ser Asp Ala Lys Met Asn Leu Ser Ser
                245                 250                 255
Leu Ala Trp Glu Gln Met Gly Arg Tyr Arg Cys Thr Val Glu Asn Pro
            260                 265                 270
Val Thr Gln Leu Ile Met Tyr Met Asp Val Arg Ile Gln Ala Pro His
        275                 280                 285
Glu Cys Ser Ser Ser Pro Pro Gly Ser Cys Phe Ala His Leu Pro Ala
    290                 295                 300
Ser Met Pro Cys
305
```

<210> 25
<211> 457
<212> PRT
<213> Homo sapiens

<400> 25

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Met Asp Leu Ser Arg Pro Arg Trp Ser Leu Trp Arg Arg Val Phe Leu
 1               5                  10                  15
Met Ala Ser Leu Leu Ala Cys Gly Ile Cys Gln Ala Ser Gly Gln Ile
            20                  25                  30
Phe Ile Thr Gln Thr Leu Gly Ile Lys Gly Tyr Arg Thr Val Val Ala
        35                  40                  45
Leu Asp Lys Val Pro Glu Asp Val Gln Glu Tyr Ser Trp Tyr Trp Gly
    50                  55                  60
Ala Asn Asp Ser Ala Gly Asn Met Ile Ile Ser His Lys Pro Pro Ser
65                  70                  75                  80
Ala Gln Gln Pro Gly Pro Met Tyr Thr Gly Arg Glu Arg Val Asn Arg
                85                  90                  95
Glu Gly Ser Leu Leu Ile Arg Pro Thr Ala Leu Asn Asp Thr Gly Asn
            100                 105                 110
Tyr Thr Val Arg Val Val Ala Gly Asn Glu Thr Gln Arg Ala Thr Gly
        115                 120                 125
Trp Leu Glu Val Leu Glu Leu Gly Ser Asn Leu Gly Ile Ser Val Asn
    130                 135                 140
Ala Ser Ser Leu Val Glu Asn Met Asp Ser Val Ala Ala Asp Cys Leu
145                 150                 155                 160
```

```
Thr Asn Val Thr Asn Ile Thr Trp Tyr Val Asn Asp Val Pro Thr Ser
                165                 170                 175
Ser Ser Asp Arg Met Thr Ile Ser Pro Asp Gly Lys Thr Leu Val Ile
            180                 185                 190
Leu Arg Val Ser Arg Tyr Asp Arg Thr Ile Gln Cys Met Ile Glu Ser
        195                 200                 205
Phe Pro Glu Ile Phe Gln Arg Ser Glu Arg Ile Ser Leu Thr Val Ala
    210                 215                 220
Tyr Gly Pro Asp Tyr Val Leu Leu Arg Ser Asn Pro Asp Asp Phe Asn
225                 230                 235                 240
Gly Ile Val Thr Ala Glu Ile Gly Ser Gln Val Glu Met Glu Cys Ile
                245                 250                 255
Cys Tyr Ser Phe Leu Asp Leu Lys Tyr His Trp Ile His Asn Gly Ser
            260                 265                 270
Leu Leu Asn Phe Ser Asp Ala Lys Met Asn Leu Ser Ser Leu Ala Trp
        275                 280                 285
Glu Gln Met Gly Arg Tyr Arg Cys Thr Val Glu Asn Pro Val Thr Gln
    290                 295                 300
Leu Ile Met Tyr Met Asp Val Arg Ile Gln Ala Pro His Glu Cys Pro
305                 310                 315                 320
Leu Pro Ser Gly Ile Leu Pro Val Val His Arg Asp Phe Ser Ile Ser
                325                 330                 335
Gly Ser Met Val Met Phe Leu Ile Met Leu Thr Val Leu Gly Gly Val
            340                 345                 350
Tyr Ile Cys Gly Val Leu Ile His Ala Leu Ile Asn His Tyr Ser Ile
        355                 360                 365
Arg Cys Pro His Cys Ser Gly Thr Arg Val Gly Cys Trp Leu Gly Ala
    370                 375                 380
Gly Thr Gln Glu Pro Ala Leu Pro Pro Glu Gly Lys Gln Ser Gln Lys
385                 390                 395                 400
Gly Arg Asp Lys Pro Gly Thr Arg Leu Ser Gly Ile Ile Trp Gly Arg
                405                 410                 415
Gln Ile Ser Pro Gln Asp Leu Lys Leu Met Gly Ala Arg Glu Gly Leu
            420                 425                 430
Glu Ser Ala Met Val Leu Asn Ser Cys Gly Val Ser Ser Ser Asn Phe
        435                 440                 445
Pro Ser Leu Cys Val Tyr Lys Gly Tyr
    450                 455
```

<210> 26
<211> 704
<212> PRT
<213> Homo sapiens

<400> 26
Met Leu His Asp Gly Leu Thr Ala Pro Asp Gly Cys Gly Ile Tyr Ser
1 5 10 15
Leu Thr Gly Arg Glu Val Leu Thr Pro Phe Pro Gly Leu Gly Thr Ala
20 25 30
Ala Ala Pro Ala Gln Gly Gly Ala His Leu Lys Gln Cys Asp Leu Leu
35 40 45
Lys Leu Ser Arg Arg Gln Lys Gln Leu Cys Arg Arg Glu Pro Gly Leu
50 55 60
Ala Glu Thr Leu Arg Asp Ala Ala His Leu Gly Leu Leu Glu Cys Gln
65 70 75 80
Phe Gln Phe Arg His Glu Arg Trp Asn Cys Ser Leu Glu Gly Arg Met
85 90 95
Gly Leu Leu Lys Arg Gly Phe Lys Glu Thr Ala Phe Leu Tyr Ala Val
100 105 110
Ser Ser Ala Ala Leu Thr His Thr Leu Ala Arg Ala Cys Ser Ala Gly
115 120 125
Arg Met Glu Arg Cys Thr Cys Asp Asp Ser Pro Gly Leu Glu Ser Arg
130 135 140
Gln Ala Trp Gln Trp Gly Val Cys Gly Asp Asn Leu Lys Tyr Ser Thr
145 150 155 160
Lys Phe Leu Ser Asn Phe Leu Gly Ser Lys Arg Gly Asn Lys Asp Leu
165 170 175
Arg Ala Arg Ala Asp Ala His Asn Thr His Val Gly Ile Lys Ala Val
180 185 190
Lys Ser Gly Leu Arg Thr Thr Cys Lys Cys His Gly Val Ser Gly Ser
195 200 205
Cys Ala Val Arg Thr Cys Trp Lys Gln Leu Ser Pro Phe Arg Glu Thr
210 215 220
Gly Gln Val Leu Lys Leu Arg Tyr Asp Ser Ala Val Lys Val Ser Ser
225 230 235 240
Ala Thr Asn Glu Ala Leu Gly Arg Leu Glu Leu Trp Ala Pro Ala Arg
245 250 255
Gln Gly Ser Leu Thr Lys Gly Leu Ala Pro Arg Ser Gly Asp Leu Val
260 265 270

```
Tyr Met Glu Asp Ser Pro Ser Phe Cys Arg Pro Ser Lys Tyr Ser Pro
        275                 280                 285
Gly Thr Ala Gly Arg Val Cys Ser Arg Glu Ala Ser Cys Ser Ser Leu
    290                 295                 300
Cys Cys Gly Arg Gly Tyr Asp Thr Gln Ser Arg Leu Val Ala Phe Ser
305                 310                 315                 320
Cys His Cys Gln Val Gln Trp Cys Cys Tyr Val Glu Cys Gln Gln Cys
                325                 330                 335
Val Gln Glu Glu Leu Val Tyr Thr Cys Lys His Ala Met Gly Pro Val
            340                 345                 350
Gly Phe Pro Arg Gln Cys Gln Gly Ala Phe Phe Glu Ser Ser Pro Gly
        355                 360                 365
Gln Thr Arg Ala Arg Leu Thr Gly Arg Glu Val Leu Thr Pro Phe Pro
    370                 375                 380
Gly Leu Gly Thr Ala Ala Ala Pro Ala Gln Gly Gly Ala His Leu Lys
385                 390                 395                 400
Gln Cys Asp Leu Leu Lys Leu Ser Arg Arg Gln Lys Gln Leu Cys Arg
                405                 410                 415
Arg Glu Pro Gly Leu Ala Glu Thr Leu Arg Asp Ala Ala His Leu Gly
            420                 425                 430
Leu Leu Glu Cys Gln Phe Gln Phe Arg His Glu Arg Trp Asn Cys Ser
        435                 440                 445
Leu Glu Gly Arg Met Gly Leu Leu Lys Arg Gly Phe Lys Glu Thr Ala
    450                 455                 460
Phe Leu Tyr Ala Val Ser Ser Ala Ala Leu Thr His Thr Leu Ala Arg
465                 470                 475                 480
Ala Cys Ser Ala Gly Arg Met Glu Arg Cys Thr Cys Asp Asp Ser Pro
                485                 490                 495
Gly Leu Glu Ser Arg Gln Ala Trp Gln Trp Gly Val Cys Gly Asp Asn
            500                 505                 510
Leu Lys Tyr Ser Thr Lys Phe Leu Ser Asn Phe Leu Gly Ser Lys Arg
        515                 520                 525
Gly Asn Lys Asp Leu Arg Ala Arg Ala Asp Ala His Asn Thr His Val
    530                 535                 540
Gly Ile Lys Ala Val Lys Ser Gly Leu Arg Thr Thr Cys Lys Cys His
545                 550                 555                 560
Gly Val Ser Gly Ser Cys Ala Val Arg Thr Cys Trp Lys Gln Leu Ser
                565                 570                 575
Pro Phe Arg Glu Thr Gly Gln Val Leu Lys Leu Arg Tyr Asp Ser Ala
            580                 585                 590
```

```
Val Lys Val Ser Ser Ala Thr Asn Glu Ala Leu Gly Arg Leu Glu Leu
        595                 600                 605
Trp Ala Pro Ala Arg Gln Gly Ser Leu Thr Lys Gly Leu Ala Pro Arg
    610                 615                 620
Ser Gly Asp Leu Val Tyr Met Glu Asp Ser Pro Ser Phe Cys Arg Pro
625                 630                 635                 640
Ser Lys Tyr Ser Pro Gly Thr Ala Gly Arg Val Cys Ser Arg Glu Ala
                645                 650                 655
Ser Cys Ser Ser Leu Cys Cys Gly Arg Gly Tyr Asp Thr Gln Ser Arg
            660                 665                 670
Leu Val Ala Phe Ser Cys His Cys Gln Val Gln Trp Cys Cys Tyr Val
        675                 680                 685
Glu Cys Gln Gln Cys Val Gln Glu Glu Leu Val Tyr Thr Cys Lys His
    690                 695                 700
```

<210> 27
<211> 361
<212> PRT
<213> Homo sapiens

<400> 27

```
Met Lys Pro Leu Arg Arg Pro Leu Pro Phe Ile Cys Pro Ser Pro Pro
 1               5                  10                  15
Ser Pro Arg Leu Thr Cys Leu Pro Pro Leu Ala Leu Ser Ser Leu Thr
            20                  25                  30
Gly Arg Glu Val Leu Thr Pro Phe Pro Gly Leu Gly Thr Ala Ala Ala
        35                  40                  45
Pro Ala Gln Gly Gly Ala His Leu Lys Gln Cys Asp Leu Leu Lys Leu
    50                  55                  60
Ser Arg Arg Gln Lys Gln Leu Cys Arg Arg Glu Pro Gly Leu Ala Glu
65                  70                  75                  80
Thr Leu Arg Asp Ala Ala His Leu Gly Leu Leu Glu Cys Gln Phe Gln
                85                  90                  95
Phe Arg His Glu Arg Trp Asn Cys Ser Leu Glu Gly Arg Met Gly Leu
            100                 105                 110
Leu Lys Arg Gly Phe Lys Glu Thr Ala Phe Leu Tyr Ala Val Ser Ser
        115                 120                 125
Ala Ala Leu Thr His Thr Leu Ala Arg Ala Cys Ser Ala Gly Arg Met
    130                 135                 140
```

```
Glu Arg Cys Thr Cys Asp Asp Ser Pro Gly Leu Glu Ser Arg Gln Ala
145                 150                 155                 160
Trp Gln Trp Gly Val Cys Gly Asp Asn Leu Lys Tyr Ser Thr Lys Phe
                165                 170                 175
Leu Ser Asn Phe Leu Gly Ser Lys Arg Gly Asn Lys Asp Leu Arg Ala
            180                 185                 190
Arg Ala Asp Ala His Asn Thr His Val Gly Ile Lys Ala Val Lys Ser
        195                 200                 205
Gly Leu Arg Thr Thr Cys Lys Cys His Gly Val Ser Gly Ser Cys Ala
    210                 215                 220
Val Arg Thr Cys Trp Lys Gln Leu Ser Pro Phe Arg Glu Thr Gly Gln
225                 230                 235                 240
Val Leu Lys Leu Arg Tyr Asp Ser Ala Val Lys Val Ser Ser Ala Thr
                245                 250                 255
Asn Glu Ala Leu Gly Arg Leu Glu Leu Trp Ala Pro Ala Arg Gln Gly
            260                 265                 270
Ser Leu Thr Lys Gly Leu Ala Pro Arg Ser Gly Asp Leu Val Tyr Met
        275                 280                 285
Glu Asp Ser Pro Ser Phe Cys Arg Pro Ser Lys Tyr Ser Pro Gly Thr
    290                 295                 300
Ala Gly Arg Val Cys Ser Arg Glu Ala Ser Cys Ser Ser Leu Cys Cys
305                 310                 315                 320
Gly Arg Gly Tyr Asp Thr Gln Ser Arg Leu Val Ala Phe Ser Cys His
                325                 330                 335
Cys Gln Val Gln Trp Cys Cys Tyr Val Glu Cys Gln Gln Cys Val Gln
            340                 345                 350
Glu Glu Leu Val Tyr Thr Cys Lys His
        355                 360
```

<210> 28
<211> 365
<212> PRT
<213> Homo sapiens

<400> 28

```
Met Trp Leu Leu Leu Thr Thr Thr Cys Leu Ile Cys Gly Thr Leu Asn
 1               5                  10                  15
Ala Gly Gly Phe Leu Asp Leu Glu Asn Glu Val Asn Pro Glu Val Trp
            20                  25                  30
```

```
Met Asn Thr Ser Glu Ile Ile Ile Tyr Asn Gly Tyr Pro Ser Glu Glu
        35                  40                  45
Tyr Glu Val Thr Thr Glu Asp Gly Tyr Ile Leu Leu Val Asn Arg Ile
    50                  55                  60
Pro Tyr Gly Arg Thr His Ala Arg Ser Thr Ala Asp Ala Gly Tyr Asp
65                  70                  75                  80
Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Arg His Lys
                85                  90                  95
Thr Leu Ser Glu Thr Asp Glu Lys Phe Trp Ala Phe Ser Phe Asp Glu
            100                 105                 110
Met Ala Lys Tyr Asp Leu Pro Gly Val Ile Asp Phe Ile Val Asn Lys
        115                 120                 125
Thr Gly Gln Glu Lys Leu Tyr Phe Ile Gly His Ser Leu Gly Thr Thr
    130                 135                 140
Ile Gly Phe Val Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Arg Ile
145                 150                 155                 160
Lys Met Asn Phe Ala Leu Gly Pro Thr Ile Ser Phe Lys Tyr Pro Thr
                165                 170                 175
Gly Ile Phe Thr Arg Phe Phe Leu Leu Pro Asn Ser Ile Ile Lys Ala
            180                 185                 190
Val Phe Gly Thr Lys Gly Phe Phe Leu Glu Asp Lys Lys Thr Lys Ile
        195                 200                 205
Ala Ser Thr Lys Ile Cys Asn Asn Lys Ile Leu Trp Leu Ile Cys Ser
    210                 215                 220
Glu Phe Met Ser Leu Trp Ala Gly Ser Asn Lys Lys Asn Met Asn Gln
225                 230                 235                 240
Ser Arg Met Asp Val Tyr Met Ser His Ala Pro Thr Gly Ser Ser Val
                245                 250                 255
His Asn Ile Leu His Ile Lys Gln Leu Tyr His Ser Asp Glu Phe Arg
            260                 265                 270
Ala Tyr Asp Trp Gly Asn Asp Ala Asp Asn Met Lys His Tyr Asn Gln
        275                 280                 285
Ser His Pro Pro Ile Tyr Asp Leu Thr Ala Met Lys Val Pro Thr Ala
    290                 295                 300
Ile Trp Ala Gly Gly His Asp Val Leu Val Thr Pro Gln Asp Val Ala
305                 310                 315                 320
Arg Ile Leu Pro Gln Ile Lys Ser Leu His Tyr Phe Lys Leu Leu Pro
                325                 330                 335
Asp Trp Asn His Phe Asp Phe Val Trp Gly Leu Asp Ala Pro Gln Arg
            340                 345                 350
```

Met Tyr Ser Glu Ile Ile Ala Leu Met Lys Ala Tyr Ser
355 360 365

<210> 29
<211> 397
<212> PRT
<213> Homo sapiens

<400> 29
Met Trp Gln Leu Leu Ala Ala Ala Cys Trp Met Leu Leu Leu Gly Ser
1 5 10 15
Met Tyr Gly Tyr Asp Lys Lys Gly Asn Asn Ala Asn Pro Glu Ala Asn
20 25 30
Met Asn Ile Ser Gln Ile Ile Ser Tyr Trp Gly Tyr Pro Tyr Glu Glu
35 40 45
Tyr Asp Val Thr Thr Lys Asp Gly Tyr Ile Leu Gly Ile Tyr Arg Ile
50 55 60
Pro His Gly Arg Gly Cys Pro Gly Arg Thr Ala Pro Lys Pro Ala Val
65 70 75 80
Tyr Leu Gln His Gly Leu Ile Ala Ser Ala Ser Asn Trp Ile Cys Asn
85 90 95
Leu Pro Asn Asn Ser Leu Ala Phe Leu Leu Ala Asp Ser Gly Tyr Asp
100 105 110
Val Trp Leu Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Lys His Leu
115 120 125
Lys Leu Ser Pro Lys Ser Pro Glu Tyr Trp Ala Phe Ser Leu Asp Glu
130 135 140
Met Ala Lys Tyr Asp Leu Pro Ala Thr Ile Asn Phe Ile Ile Glu Lys
145 150 155 160
Thr Gly Gln Lys Arg Leu Tyr Tyr Val Gly His Ser Gln Gly Thr Thr
165 170 175
Ile Ala Phe Ile Ala Phe Ser Thr Asn Pro Glu Leu Ala Lys Lys Ile
180 185 190
Lys Ile Phe Phe Ala Leu Ala Pro Val Val Thr Val Lys Tyr Thr Gln
195 200 205
Ser Pro Met Lys Lys Leu Thr Thr Leu Ser Arg Arg Val Val Lys Val
210 215 220
Leu Phe Gly Asp Lys Met Phe His Pro His Thr Leu Phe Asp Gln Phe
225 230 235 240

```
Ile Ala Thr Lys Val Cys Asn Arg Lys Leu Phe Arg Arg Ile Cys Ser
                245                 250                 255
Asn Phe Leu Phe Thr Leu Ser Gly Phe Asp Pro Gln Asn Leu Asn Met
            260                 265                 270
Ser Arg Leu Asp Val Tyr Leu Ser His Asn Pro Ala Gly Thr Ser Val
        275                 280                 285
Gln Asn Met Leu His Trp Ala Gln Leu Tyr His Ser Asp Glu Phe Arg
    290                 295                 300
Ala Tyr Asp Trp Gly Asn Asp Ala Asp Asn Met Lys His Tyr Asn Gln
305                 310                 315                 320
Ser His Pro Pro Ile Tyr Asp Leu Thr Ala Met Lys Val Pro Thr Ala
                325                 330                 335
Ile Trp Ala Gly Gly His Asp Val Leu Val Thr Pro Gln Asp Val Ala
            340                 345                 350
Arg Ile Leu Pro Gln Ile Lys Ser Leu His Tyr Phe Lys Leu Leu Pro
        355                 360                 365
Asp Trp Asn His Phe Asp Phe Val Trp Gly Leu Asp Ala Pro Gln Arg
    370                 375                 380
Met Tyr Ser Glu Ile Ile Ala Leu Met Lys Ala Tyr Ser
385                 390                 395
```

<210> 30
<211> 3705
<212> PRT
<213> Homo sapiens

<400> 30

```
Met Ala Lys Arg Leu Cys Ala Gly Ser Ala Leu Cys Val Arg Gly Pro
 1               5                  10                  15
Arg Gly Pro Ala Pro Leu Leu Leu Val Gly Leu Ala Leu Leu Gly Ala
            20                  25                  30
Ala Arg Ala Arg Glu Glu Ala Gly Gly Gly Phe Ser Leu His Pro Pro
        35                  40                  45
Tyr Phe Asn Leu Ala Glu Gly Ala Arg Ile Ala Ala Ser Ala Thr Cys
    50                  55                  60
Gly Glu Glu Ala Pro Ala Arg Gly Ser Pro Arg Pro Thr Glu Asp Leu
65                  70                  75                  80
Tyr Cys Lys Leu Val Gly Gly Pro Val Ala Gly Gly Asp Pro Asn Gln
                85                  90                  95
```

Thr Ile Arg Gly Gln Tyr Cys Asp Ile Cys Thr Ala Ala Asn Ser Asn
100 105 110
Lys Ala His Pro Ala Ser Asn Ala Ile Asp Gly Thr Glu Arg Trp Trp
115 120 125
Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val Asn Val
130 135 140
Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu Ile Lys
145 150 155 160
Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg Ser Met
165 170 175
Asp Phe Gly Arg Thr Tyr Gln Pro Trp Gln Phe Phe Ala Ser Ser Lys
180 185 190
Arg Asp Cys Leu Glu Arg Phe Gly Pro Gln Thr Leu Glu Arg Ile Thr
195 200 205
Arg Asp Asp Ala Ala Ile Cys Thr Thr Glu Tyr Ser Arg Ile Val Pro
210 215 220
Leu Glu Asn Gly Glu Ile Val Val Ser Leu Val Asn Gly Arg Pro Gly
225 230 235 240
Ala Met Asn Phe Ser Tyr Ser Pro Leu Leu Arg Glu Phe Thr Lys Ala
245 250 255
Thr Asn Val Arg Leu Arg Phe Leu Arg Thr Asn Thr Leu Leu Gly His
260 265 270
Leu Met Gly Lys Ala Leu Arg Asp Pro Thr Val Thr Arg Arg Tyr Tyr
275 280 285
Tyr Ser Ile Lys Asp Ile Ser Ile Gly Gly Arg Cys Val Cys His Gly
290 295 300
His Ala Asp Ala Cys Asp Ala Lys Asp Pro Thr Asp Pro Phe Arg Leu
305 310 315 320
Gln Cys Thr Cys Gln His Asn Thr Cys Gly Gly Thr Cys Asp Arg Cys
325 330 335
Cys Pro Gly Phe Asn Gln Gln Pro Trp Lys Pro Ala Thr Ala Asn Ser
340 345 350
Ala Asn Glu Cys Gln Ser Cys Asn Cys Tyr Gly His Ala Thr Asp Cys
355 360 365
Tyr Tyr Asp Pro Glu Val Asp Arg Arg Arg Ala Ser Gln Ser Leu Asp
370 375 380
Gly Thr Tyr Gln Gly Gly Gly Val Cys Ile Asp Cys Gln His His Thr
385 390 395 400
Thr Gly Val Asn Cys Glu Arg Cys Leu Pro Gly Phe Tyr Arg Ser Pro
405 410 415

```
Asn His Pro Leu Asp Ser Pro His Val Cys Arg Arg Cys Asn Cys Glu
            420                 425                 430
Ser Asp Phe Thr Asp Gly Thr Cys Glu Asp Leu Thr Gly Arg Cys Tyr
        435                 440                 445
Cys Arg Pro Asn Phe Ser Gly Glu Arg Cys Asp Val Cys Ala Glu Gly
    450                 455                 460
Phe Thr Gly Phe Pro Ser Cys Tyr Pro Thr Pro Ser Ser Ser Asn Asp
465                 470                 475                 480
Thr Arg Glu Gln Val Leu Pro Ala Gly Gln Ile Val Asn Cys Asp Cys
                485                 490                 495
Ser Ala Ala Gly Thr Gln Gly Asn Ala Cys Arg Lys Asp Pro Arg Val
            500                 505                 510
Gly Arg Cys Leu Cys Lys Pro Asn Phe Gln Gly Thr His Cys Glu Leu
        515                 520                 525
Cys Ala Pro Gly Phe Tyr Gly Pro Gly Cys Gln Pro Cys Gln Cys Ser
    530                 535                 540
Ser Pro Gly Val Ala Asp Asp Arg Cys Asp Pro Asp Thr Gly Gln Cys
545                 550                 555                 560
Arg Cys Arg Val Gly Phe Glu Gly Ala Thr Cys Asp Arg Cys Ala Pro
                565                 570                 575
Gly Tyr Phe His Phe Pro Leu Cys Gln Leu Cys Gly Cys Ser Pro Ala
            580                 585                 590
Gly Thr Leu Pro Glu Gly Cys Asp Glu Ala Gly Arg Cys Leu Cys Gln
        595                 600                 605
Pro Glu Phe Ala Gly Pro His Cys Asp Arg Cys Arg Pro Gly Tyr His
    610                 615                 620
Gly Phe Pro Asn Cys Gln Ala Cys Thr Cys Asp Pro Arg Gly Ala Leu
625                 630                 635                 640
Asp Gln Leu Cys Gly Ala Gly Gly Leu Cys Arg Cys Arg Pro Gly Tyr
                645                 650                 655
Thr Gly Thr Ala Cys Gln Glu Cys Ser Pro Gly Phe His Gly Phe Pro
            660                 665                 670
Ser Cys Val Pro Cys His Cys Ser Ala Glu Gly Ser Leu His Ala Ala
        675                 680                 685
Cys Asp Pro Arg Ser Gly Gln Cys Ser Cys Arg Pro Arg Val Thr Gly
    690                 695                 700
Leu Arg Cys Asp Thr Cys Val Pro Gly Ala Tyr Asn Phe Pro Tyr Cys
705                 710                 715                 720
Glu Ala Gly Ser Cys His Pro Ala Gly Leu Ala Pro Val Asp Pro Ala
                725                 730                 735
```

```
Leu Pro Glu Ala Gln Val Pro Cys Met Cys Arg Ala His Val Glu Gly
            740                 745                 750
Pro Ser Cys Asp Arg Cys Lys Pro Gly Phe Trp Gly Leu Ser Pro Ser
        755                 760                 765
Asn Pro Glu Gly Cys Thr Arg Cys Ser Cys Asp Leu Arg Gly Thr Leu
    770                 775                 780
Gly Gly Val Ala Glu Cys Gln Pro Gly Thr Gly Gln Cys Phe Cys Lys
785                 790                 795                 800
Pro His Val Cys Gly Gln Ala Cys Ala Ser Cys Lys Asp Gly Phe Phe
                805                 810                 815
Gly Leu Asp Gln Ala Asp Tyr Phe Gly Cys Arg Ser Cys Arg Cys Asp
            820                 825                 830
Ile Gly Gly Ala Leu Gly Gln Ser Cys Glu Pro Arg Thr Gly Val Cys
        835                 840                 845
Arg Cys Arg Pro Asn Thr Gln Gly Pro Thr Cys Ser Glu Pro Ala Arg
    850                 855                 860
Asp His Tyr Leu Pro Asp Leu His His Leu Arg Leu Glu Leu Glu Glu
865                 870                 875                 880
Ala Ala Thr Pro Glu Gly His Ala Val Arg Phe Gly Phe Asn Pro Leu
                885                 890                 895
Glu Phe Glu Asn Phe Ser Trp Arg Gly Tyr Ala Gln Met Ala Pro Val
            900                 905                 910
Gln Pro Arg Ile Val Ala Arg Leu Asn Leu Thr Ser Pro Asp Leu Phe
        915                 920                 925
Trp Leu Val Phe Arg Tyr Val Asn Arg Gly Ala Met Ser Val Ser Gly
    930                 935                 940
Arg Val Ser Val Arg Glu Glu Gly Arg Ser Ala Thr Cys Ala Asn Cys
945                 950                 955                 960
Thr Ala Gln Ser Gln Pro Val Ala Phe Pro Pro Ser Thr Glu Pro Ala
                965                 970                 975
Phe Ile Thr Val Pro Gln Arg Gly Phe Gly Glu Pro Phe Val Leu Asn
            980                 985                 990
Pro Gly Thr Trp Ala Leu Arg Val Glu Ala Glu Gly Val Leu Leu Asp
        995                 1000                1005
Tyr Val Val Leu Leu Pro Ser Ala Tyr Tyr Glu Ala Ala Leu Leu Gln
    1010                1015                1020
Leu Arg Val Thr Glu Ala Cys Thr Tyr Arg Pro Ser Ala Gln Gln Ser
1025                1030                1035                1040
Gly Asp Asn Cys Leu Leu Tyr Thr His Leu Pro Leu Asp Gly Phe Pro
                1045                1050                1055
```

```
Ser Ala Ala Gly Leu Glu Ala Leu Cys Arg Gln Asp Asn Ser Leu Pro
            1060                1065                1070
Arg Pro Cys Pro Thr Glu Gln Leu Ser Pro Ser His Pro Pro Leu Ile
        1075                1080                1085
Thr Cys Thr Gly Ser Asp Val Asp Val Gln Leu Gln Val Ala Val Pro
    1090                1095                1100
Gln Pro Gly Arg Tyr Ala Leu Val Val Glu Tyr Ala Asn Glu Asp Ala
1105                1110                1115                1120
Arg Gln Glu Val Gly Val Ala Val His Thr Pro Gln Arg Ala Pro Gln
                1125                1130                1135
Gln Gly Leu Leu Ser Leu His Pro Cys Leu Tyr Ser Thr Leu Cys Arg
            1140                1145                1150
Gly Thr Ala Arg Asp Thr Gln Asp His Leu Ala Val Phe His Leu Asp
        1155                1160                1165
Ser Glu Ala Ser Val Arg Leu Thr Ala Glu Gln Ala Arg Phe Phe Leu
    1170                1175                1180
His Gly Val Thr Leu Val Pro Ile Glu Glu Phe Ser Pro Glu Phe Val
1185                1190                1195                1200
Glu Pro Arg Val Ser Cys Ile Ser Ser His Gly Ala Phe Gly Pro Asn
                1205                1210                1215
Ser Ala Ala Cys Leu Pro Ser Arg Phe Pro Lys Pro Pro Gln Pro Ile
            1220                1225                1230
Ile Leu Arg Asp Cys Gln Val Ile Pro Leu Pro Pro Gly Leu Pro Leu
        1235                1240                1245
Thr His Ala Gln Asp Leu Thr Pro Ala Met Ser Pro Ala Gly Pro Arg
    1250                1255                1260
Pro Arg Pro Pro Thr Ala Val Asp Pro Asp Ala Glu Pro Thr Leu Leu
1265                1270                1275                1280
Arg Glu Pro Gln Ala Thr Val Val Phe Thr Thr His Val Pro Thr Leu
                1285                1290                1295
Gly Arg Tyr Ala Phe Leu Leu His Gly Tyr Gln Pro Ala His Pro Thr
            1300                1305                1310
Phe Pro Val Glu Val Leu Ile Asn Ala Gly Arg Val Trp Gln Gly His
        1315                1320                1325
Ala Asn Ala Ser Phe Cys Pro His Gly Tyr Gly Cys Arg Thr Leu Val
    1330                1335                1340
Val Cys Glu Gly Gln Ala Leu Leu Asp Val Thr His Ser Glu Leu Thr
1345                1350                1355                1360
Val Thr Val Arg Val Pro Lys Gly Arg Trp Leu Trp Leu Asp Tyr Val
                1365                1370                1375
```

Leu Val Val Pro Glu Asn Val Tyr Ser Phe Gly Tyr Leu Arg Glu Glu
1380 1385 1390
Pro Leu Asp Lys Ser Tyr Asp Phe Ile Ser His Cys Ala Ala Gln Gly
1395 1400 1405
Tyr His Ile Ser Pro Ser Ser Ser Ser Leu Phe Cys Arg Asn Ala Ala
1410 1415 1420
Ala Ser Leu Ser Leu Phe Tyr Asn Asn Gly Ala Arg Pro Cys Gly Cys
1425 1430 1435 1440
His Glu Val Gly Ala Thr Gly Pro Thr Cys Glu Pro Phe Gly Gly Gln
1445 1450 1455
Cys Pro Cys His Ala His Val Ile Gly Arg Asp Cys Ser Arg Cys Ala
1460 1465 1470
Thr Gly Tyr Trp Gly Phe Pro Asn Cys Arg Pro Cys Asp Cys Gly Ala
1475 1480 1485
Arg Leu Cys Asp Glu Leu Thr Gly Gln Cys Ile Cys Pro Pro Arg Thr
1490 1495 1500
Ile Pro Pro Asp Cys Leu Leu Cys Gln Pro Gln Thr Phe Gly Cys His
1505 1510 1515 1520
Pro Leu Val Gly Cys Glu Glu Cys Asn Cys Ser Gly Pro Gly Ile Gln
1525 1530 1535
Glu Leu Thr Asp Pro Thr Cys Asp Thr Asp Ser Gly Gln Cys Lys Cys
1540 1545 1550
Arg Pro Asn Val Thr Gly Arg Arg Cys Asp Thr Cys Ser Pro Gly Phe
1555 1560 1565
His Gly Tyr Pro Arg Cys Arg Pro Cys Asp Cys His Glu Ala Gly Thr
1570 1575 1580
Ala Pro Gly Val Cys Asp Pro Leu Thr Gly Gln Cys Tyr Cys Lys Glu
1585 1590 1595 1600
Asn Val Gln Gly Pro Lys Cys Asp Gln Cys Ser Leu Gly Thr Phe Ser
1605 1610 1615
Leu Asp Ala Ala Asn Pro Lys Gly Cys Thr Arg Cys Phe Cys Phe Gly
1620 1625 1630
Ala Thr Glu Arg Cys Arg Ser Ser Ser Tyr Thr Arg Gln Glu Phe Val
1635 1640 1645
Asp Met Glu Gly Trp Val Leu Leu Ser Thr Asp Arg Gln Val Val Pro
1650 1655 1660
His Glu Arg Gln Pro Gly Thr Glu Met Leu Arg Ala Asp Leu Arg His
1665 1670 1675 1680
Val Pro Glu Ala Val Pro Glu Ala Phe Pro Glu Leu Tyr Trp Gln Ala
1685 1690 1695

```
Pro Pro Ser Tyr Leu Gly Asp Arg Val Ser Ser Tyr Gly Gly Thr Leu
            1700                1705                1710
Arg Tyr Glu Leu His Ser Glu Thr Gln Arg Gly Asp Val Phe Val Pro
        1715                1720                1725
Met Glu Ser Arg Pro Asp Val Val Leu Gln Gly Asn Gln Met Ser Ile
    1730                1735                1740
Thr Phe Leu Glu Pro Ala Tyr Pro Thr Pro Gly His Val His Arg Gly
1745                1750                1755                1760
Gln Leu Gln Leu Val Glu Gly Asn Phe Arg His Thr Glu Thr Arg Asn
                1765                1770                1775
Thr Val Ser Arg Glu Glu Leu Met Met Val Leu Ala Ser Leu Glu Gln
            1780                1785                1790
Leu Gln Ile Arg Ala Leu Phe Ser Gln Ile Ser Ser Ala Val Phe Leu
        1795                1800                1805
Arg Arg Val Ala Leu Glu Val Ala Ser Pro Ala Gly Gln Gly Ala Leu
    1810                1815                1820
Ala Ser Asn Val Glu Leu Cys Leu Cys Pro Ala Ser Tyr Arg Gly Asp
1825                1830                1835                1840
Ser Cys Gln Glu Cys Ala Pro Gly Phe Tyr Arg Asp Val Lys Gly Leu
                1845                1850                1855
Phe Leu Gly Arg Cys Val Pro Cys Gln Cys His Gly His Ser Asp Arg
            1860                1865                1870
Cys Leu Pro Gly Ser Gly Val Cys Val Asp Cys Gln His Asn Thr Glu
        1875                1880                1885
Gly Ala His Cys Glu Arg Cys Gln Ala Gly Phe Val Ser Ser Arg Asp
    1890                1895                1900
Asp Pro Ser Ala Pro Cys Val Ser Cys Pro Cys Pro Leu Ser Val Pro
1905                1910                1915                1920
Ser Asn Asn Phe Ala Glu Gly Cys Val Leu Arg Gly Gly Arg Thr Gln
                1925                1930                1935
Cys Leu Cys Lys Pro Gly Tyr Ala Gly Ala Ser Cys Glu Arg Cys Ala
            1940                1945                1950
Pro Gly Phe Phe Gly Asn Pro Leu Val Leu Gly Ser Ser Cys Gln Pro
        1955                1960                1965
Cys Asp Cys Ser Gly Asn Gly Asp Pro Asn Leu Leu Phe Ser Asp Cys
    1970                1975                1980
Asp Pro Leu Thr Gly Ala Cys Arg Gly Cys Leu Arg His Thr Thr Gly
1985                1990                1995                2000
Pro Arg Cys Glu Ile Cys Ala Pro Gly Phe Tyr Gly Asn Ala Leu Leu
                2005                2010                2015
```

Pro Gly Asn Cys Thr Arg Cys Asp Cys Thr Pro Cys Gly Thr Glu Ala
2020 2025 2030
Cys Asp Pro His Ser Gly His Cys Leu Cys Lys Ala Gly Val Thr Gly
2035 2040 2045
Arg Arg Cys Asp Arg Cys Gln Glu Gly His Phe Gly Phe Asp Gly Cys
2050 2055 2060
Gly Gly Cys Arg Pro Cys Ala Cys Gly Pro Ala Ala Glu Gly Ser Glu
2065 2070 2075 2080
Cys His Pro Gln Ser Gly Gln Cys His Cys Arg Pro Gly Thr Met Gly
2085 2090 2095
Pro Gln Cys Arg Glu Cys Ala Pro Gly Tyr Trp Gly Leu Pro Glu Gln
2100 2105 2110
Gly Cys Arg Arg Cys Gln Cys Pro Gly Gly Arg Cys Asp Pro His Thr
2115 2120 2125
Gly Arg Cys Asn Cys Pro Pro Gly Leu Ser Gly Glu Arg Cys Asp Thr
2130 2135 2140
Cys Ser Gln Gln His Gln Val Pro Val Pro Gly Gly Pro Val Gly His
2145 2150 2155 2160
Ser Ile His Cys Glu Val Cys Asp His Cys Val Val Leu Leu Leu Asp
2165 2170 2175
Asp Leu Glu Arg Ala Gly Ala Leu Leu Pro Ala Ile His Glu Gln Leu
2180 2185 2190
Arg Gly Ile Asn Ala Ser Ser Met Ala Trp Ala Arg Leu His Arg Leu
2195 2200 2205
Asn Ala Ser Ile Ala Asp Leu Gln Ser Gln Leu Arg Ser Pro Leu Gly
2210 2215 2220
Pro Arg His Glu Thr Ala Gln Gln Leu Glu Val Leu Glu Gln Gln Ser
2225 2230 2235 2240
Thr Ser Leu Gly Gln Asp Ala Arg Arg Leu Gly Gly Gln Ala Gly Ala
2245 2250 2255
Pro Arg Pro Pro Arg Ala Pro Gly Gly Phe His Leu Tyr Gln Ala Ser
2260 2265 2270
Gln Leu Leu Ala Gly Thr Glu Ala Thr Leu Gly His Ala Lys Thr Leu
2275 2280 2285
Leu Ala Ala Ile Arg Ala Val Asp Arg Thr Leu Ser Glu Leu Met Ser
2290 2295 2300
Gln Thr Gly His Leu Gly Leu Ala Asn Ala Ser Ala Pro Ser Gly Glu
2305 2310 2315 2320
Gln Leu Leu Arg Thr Leu Ala Glu Val Glu Arg Leu Leu Trp Glu Met
2325 2330 2335

Arg Ala Arg Asp Leu Gly Ala Pro Gln Ala Ala Ala Glu Ala Glu Leu
2340 2345 2350
Ala Ala Ala Gln Arg Leu Leu Ala Arg Val Gln Glu Gln Leu Ser Ser
2355 2360 2365
Leu Trp Glu Glu Asn Gln Ala Leu Ala Thr Gln Thr Arg Asp Arg Leu
2370 2375 2380
Ala Gln His Glu Ala Gly Leu Met Asp Leu Arg Glu Ala Leu Asn Arg
2385 2390 2395 2400
Ala Val Asp Ala Thr Arg Glu Ala Gln Glu Leu Asn Ser Arg Asn Gln
2405 2410 2415
Glu Arg Leu Glu Glu Ala Leu Gln Arg Lys Gln Glu Leu Ser Arg Asp
2420 2425 2430
Asn Ala Thr Leu Gln Ala Thr Leu His Ala Ala Arg Asp Thr Leu Ala
2435 2440 2445
Ser Val Phe Arg Leu Leu His Ser Leu Asp Gln Ala Lys Glu Glu Leu
2450 2455 2460
Glu Arg Leu Ala Ala Ser Leu Asp Gly Ala Arg Thr Pro Leu Leu Gln
2465 2470 2475 2480
Arg Met Gln Thr Phe Ser Pro Ala Gly Ser Lys Leu Arg Leu Val Glu
2485 2490 2495
Ala Ala Glu Ala His Ala Gln Gln Leu Gly Gln Leu Ala Leu Asn Leu
2500 2505 2510
Ser Ser Ile Ile Leu Asp Val Asn Gln Asp Arg Leu Thr Gln Arg Ala
2515 2520 2525
Ile Glu Ala Ser Asn Ala Tyr Ser Arg Ile Leu Gln Ala Val Gln Ala
2530 2535 2540
Ala Glu Asp Ala Ala Gly Gln Ala Leu Gln Gln Ala Asp His Thr Trp
2545 2550 2555 2560
Ala Thr Val Val Arg Gln Gly Leu Val Asp Arg Ala Gln Gln Leu Leu
2565 2570 2575
Ala Asn Ser Thr Ala Leu Glu Glu Ala Met Leu Gln Glu Gln Gln Arg
2580 2585 2590
Leu Gly Leu Val Trp Ala Ala Leu Gln Gly Ala Arg Thr Gln Leu Arg
2595 2600 2605
Asp Val Arg Ala Lys Lys Asp Gln Leu Glu Ala His Ile Gln Ala Ala
2610 2615 2620
Gln Ala Met Leu Ala Met Asp Thr Asp Glu Thr Ser Lys Lys Ile Ala
2625 2630 2635 2640
His Ala Lys Ala Val Ala Ala Glu Ala Gln Asp Thr Ala Thr Arg Val
2645 2650 2655

```
Gln Ser Gln Leu Gln Ala Met Gln Glu Asn Val Glu Arg Trp Gln Gly
            2660                2665                2670
Gln Tyr Glu Gly Leu Arg Gly Gln Asp Leu Gly Gln Ala Val Leu Asp
        2675                2680                2685
Ala Gly His Ser Val Ser Thr Leu Glu Lys Thr Leu Pro Gln Leu Leu
    2690                2695                2700
Ala Lys Leu Ser Ile Leu Glu Asn Arg Gly Val His Asn Ala Ser Leu
2705                2710                2715                2720
Ala Leu Ser Ala Ser Ile Gly Arg Val Arg Glu Leu Ile Ala Gln Ala
                2725                2730                2735
Arg Gly Ala Ala Ser Lys Val Lys Val Pro Met Lys Phe Asn Gly Arg
            2740                2745                2750
Ser Gly Val Gln Leu Arg Thr Pro Arg Asp Leu Ala Asp Leu Ala Ala
        2755                2760                2765
Tyr Thr Ala Leu Lys Phe Tyr Leu Gln Gly Pro Glu Pro Glu Pro Gly
    2770                2775                2780
Gln Gly Thr Glu Asp Arg Phe Val Met Tyr Met Gly Ser Arg Gln Ala
2785                2790                2795                2800
Thr Gly Asp Tyr Met Gly Val Ser Leu Arg Asp Lys Lys Val His Trp
                2805                2810                2815
Val Tyr Gln Leu Gly Glu Ala Gly Pro Ala Val Leu Ser Ile Asp Glu
            2820                2825                2830
Asp Ile Gly Glu Gln Phe Ala Ala Val Ser Leu Asp Arg Thr Leu Gln
        2835                2840                2845
Phe Gly His Met Ser Val Thr Val Glu Arg Gln Met Ile Gln Glu Thr
    2850                2855                2860
Lys Gly Asp Thr Val Ala Pro Gly Ala Glu Gly Leu Leu Asn Leu Arg
2865                2870                2875                2880
Pro Asp Asp Phe Val Phe Tyr Val Gly Gly Tyr Pro Ser Thr Phe Thr
                2885                2890                2895
Pro Pro Pro Leu Leu Arg Phe Pro Gly Tyr Arg Gly Cys Ile Glu Met
            2900                2905                2910
Asp Thr Leu Asn Glu Glu Val Val Ser Leu Tyr Asn Phe Glu Arg Thr
        2915                2920                2925
Phe Gln Leu Asp Thr Ala Val Asp Arg Pro Cys Ala Arg Ser Lys Ser
    2930                2935                2940
Thr Gly Asp Pro Trp Leu Thr Asp Gly Ser Tyr Leu Asp Gly Thr Gly
2945                2950                2955                2960
Phe Ala Arg Ile Ser Phe Asp Ser Gln Ile Ser Thr Thr Lys Arg Phe
                2965                2970                2975
```

Glu Gln Glu Leu Arg Leu Val Ser Tyr Ser Gly Val Leu Phe Phe Leu
2980 2985 2990
Lys Gln Gln Ser Gln Phe Leu Cys Leu Ala Val Gln Glu Gly Ser Leu
2995 3000 3005
Val Leu Leu Tyr Asp Phe Gly Ala Gly Leu Lys Lys Ala Val Pro Leu
3010 3015 3020
Gln Pro Pro Pro Pro Leu Thr Ser Ala Ser Lys Ala Ile Gln Val Phe
3025 3030 3035 3040
Leu Leu Gly Gly Ser Arg Lys Arg Val Leu Val Arg Val Glu Arg Ala
3045 3050 3055
Thr Val Tyr Ser Val Glu Gln Asp Asn Asp Leu Glu Leu Ala Asp Ala
3060 3065 3070
Tyr Tyr Leu Gly Gly Val Pro Pro Asp Gln Leu Pro Pro Ser Leu Arg
3075 3080 3085
Arg Leu Phe Pro Thr Gly Gly Ser Val Arg Gly Cys Val Lys Gly Ile
3090 3095 3100
Lys Ala Leu Gly Lys Tyr Val Asp Leu Lys Arg Leu Asn Thr Thr Gly
3105 3110 3115 3120
Val Ser Ala Gly Cys Thr Ala Asp Leu Leu Val Gly Arg Ala Met Thr
3125 3130 3135
Phe His Gly His Gly Phe Leu Arg Leu Ala Leu Ser Asn Val Ala Pro
3140 3145 3150
Leu Thr Gly Asn Val Tyr Ser Gly Phe Gly Phe His Ser Ala Gln Asp
3155 3160 3165
Ser Ala Leu Leu Tyr Tyr Arg Ala Ser Pro Asp Gly Leu Cys Gln Val
3170 3175 3180
Ser Leu Gln Gln Gly Arg Val Ser Leu Gln Leu Leu Arg Thr Glu Val
3185 3190 3195 3200
Lys Thr Gln Ala Gly Phe Ala Asp Gly Ala Pro His Tyr Val Ala Phe
3205 3210 3215
Tyr Ser Asn Ala Thr Gly Val Trp Leu Tyr Val Asp Asp Gln Leu Gln
3220 3225 3230
Gln Met Lys Pro His Arg Gly Pro Pro Pro Glu Leu Gln Pro Gln Pro
3235 3240 3245
Glu Gly Pro Pro Arg Leu Leu Leu Gly Gly Leu Pro Glu Ser Gly Thr
3250 3255 3260
Ile Tyr Asn Phe Ser Gly Cys Ile Ser Asn Val Phe Val Gln Arg Leu
3265 3270 3275 3280
Leu Gly Pro Gln Arg Val Phe Asp Leu Gln Gln Asn Leu Gly Ser Val
3285 3290 3295

Asn Val Ser Thr Gly Cys Ala Pro Ala Leu Gln Ala Gln Thr Pro Gly
3300 3305 3310
Leu Gly Pro Arg Gly Leu Gln Ala Thr Ala Arg Lys Ala Ser Arg Arg
3315 3320 3325
Ser Arg Gln Pro Ala Arg His Pro Ala Cys Met Leu Pro Pro His Leu
3330 3335 3340
Arg Thr Thr Arg Asp Ser Tyr Gln Phe Gly Gly Ser Leu Ser Ser His
3345 3350 3355 3360
Leu Glu Phe Val Gly Ile Leu Ala Arg His Arg Asn Trp Pro Ser Leu
3365 3370 3375
Ser Met His Val Leu Pro Arg Ser Ser Arg Gly Leu Leu Leu Phe Thr
3380 3385 3390
Ala Arg Leu Arg Pro Gly Ser Pro Ser Leu Ala Leu Phe Leu Ser Asn
3395 3400 3405
Gly His Phe Val Ala Gln Met Glu Gly Leu Gly Thr Arg Leu Arg Ala
3410 3415 3420
Gln Ser Arg Gln Arg Ser Arg Pro Gly Arg Trp His Lys Val Ser Val
3425 3430 3435 3440
Arg Trp Glu Lys Asn Arg Ile Leu Leu Val Thr Asp Gly Ala Arg Ala
3445 3450 3455
Trp Ser Gln Glu Gly Pro His Arg Gln His Gln Gly Ala Glu His Pro
3460 3465 3470
Gln Pro His Thr Leu Phe Val Gly Gly Leu Pro Ala Ser Ser His Ser
3475 3480 3485
Ser Lys Leu Pro Val Thr Val Gly Phe Ser Gly Cys Val Lys Arg Leu
3490 3495 3500
Arg Leu His Gly Arg Pro Leu Gly Ala Pro Thr Arg Met Ala Gly Val
3505 3510 3515 3520
Thr Pro Cys Ile Leu Gly Pro Leu Glu Ala Gly Leu Phe Phe Pro Gly
3525 3530 3535
Ser Gly Gly Val Ile Thr Leu Asp Leu Pro Gly Ala Thr Leu Pro Asp
3540 3545 3550
Val Gly Leu Glu Leu Glu Val Arg Pro Leu Ala Val Thr Gly Leu Ile
3555 3560 3565
Phe His Leu Gly Gln Ala Arg Thr Pro Pro Tyr Leu Gln Leu Gln Val
3570 3575 3580
Thr Glu Lys Gln Val Leu Leu Arg Ala Asp Asp Gly Ala Gly Glu Phe
3585 3590 3595 3600
Ser Thr Ser Val Thr Arg Pro Ser Val Leu Cys Asp Gly Gln Trp His
3605 3610 3615

```
Arg Leu Ala Val Met Lys Ser Gly Asn Val Leu Arg Leu Glu Val Asp
            3620                3625                3630
Ala Gln Ser Asn His Thr Val Gly Pro Leu Leu Ala Ala Ala Ala Gly
        3635                3640                3645
Ala Pro Ala Pro Leu Tyr Leu Gly Gly Leu Pro Glu Pro Met Ala Val
    3650                3655                3660
Gln Pro Trp Pro Pro Ala Tyr Cys Gly Cys Met Arg Arg Leu Ala Val
3665                3670                3675                3680
Asn Arg Ser Pro Val Ala Met Thr Arg Ser Val Glu Val His Gly Ala
                3685                3690                3695
Val Gly Ala Ser Gly Cys Pro Ala Ala
            3700                3705
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<210> 31
<211> 3696
<212> PRT
<213> Homo sapiens

<400> 31

```
Met Ala Lys Arg Leu Cys Ala Gly Ser Ala Leu Cys Val Arg Gly Pro
 1               5                  10                  15
Arg Gly Pro Ala Pro Leu Leu Leu Val Gly Leu Ala Leu Leu Gly Ala
            20                  25                  30
Ala Arg Ala Arg Glu Glu Ala Gly Gly Gly Phe Ser Leu His Pro Pro
        35                  40                  45
Tyr Phe Asn Leu Ala Glu Gly Ala Arg Ile Ala Ala Ser Ala Thr Cys
    50                  55                  60
Gly Glu Glu Ala Pro Ala Arg Gly Ser Pro Arg Pro Thr Glu Asp Leu
65                  70                  75                  80
Tyr Cys Lys Leu Val Gly Gly Pro Val Ala Gly Gly Asp Pro Asn Gln
                85                  90                  95
Thr Ile Arg Gly Gln Tyr Cys Asp Ile Cys Thr Ala Ala Asn Ser Asn
            100                 105                 110
Lys Ala His Pro Ala Ser Asn Ala Ile Asp Gly Thr Glu Arg Trp Trp
        115                 120                 125
Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val Asn Val
    130                 135                 140
Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu Ile Lys
145                 150                 155                 160
```

```
Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg Ser Met
                165                 170                 175
Asp Phe Gly Arg Thr Tyr Gln Pro Trp Gln Phe Phe Ala Ser Ser Lys
            180                 185                 190
Arg Asp Cys Leu Glu Arg Phe Gly Pro Gln Thr Leu Glu Arg Ile Thr
        195                 200                 205
Arg Asp Asp Ala Ala Ile Cys Thr Thr Glu Tyr Ser Arg Ile Val Pro
    210                 215                 220
Leu Glu Asn Gly Glu Ile Val Val Ser Leu Val Asn Gly Arg Pro Gly
225                 230                 235                 240
Ala Met Asn Phe Ser Tyr Ser Pro Leu Leu Arg Glu Phe Thr Lys Ala
                245                 250                 255
Thr Asn Val Arg Leu Arg Phe Leu Arg Thr Asn Thr Leu Leu Gly His
            260                 265                 270
Leu Met Gly Lys Ala Leu Arg Asp Pro Thr Val Thr Arg Arg Tyr Tyr
        275                 280                 285
Tyr Ser Ile Lys Asp Ile Ser Ile Gly Gly Arg Cys Val Cys His Gly
    290                 295                 300
His Ala Asp Ala Cys Asp Ala Lys Asp Pro Thr Asp Pro Phe Arg Leu
305                 310                 315                 320
Gln Cys Thr Cys Gln His Asn Thr Cys Gly Gly Thr Cys Asp Arg Cys
                325                 330                 335
Cys Pro Gly Phe Asn Gln Gln Pro Trp Lys Pro Ala Thr Ala Asn Ser
            340                 345                 350
Ala Asn Glu Cys Gln Ser Cys Asn Cys Tyr Gly His Ala Thr Asp Cys
        355                 360                 365
Tyr Tyr Asp Pro Glu Val Asp Arg Arg Arg Ala Ser Gln Ser Leu Asp
    370                 375                 380
Gly Thr Tyr Gln Gly Gly Gly Val Cys Ile Asp Cys Gln His His Thr
385                 390                 395                 400
Thr Gly Val Asn Cys Glu Arg Cys Leu Pro Gly Phe Tyr Arg Ser Pro
                405                 410                 415
Asn His Pro Leu Asp Ser Pro His Val Cys Arg Arg Cys Asn Cys Glu
            420                 425                 430
Ser Asp Phe Thr Asp Gly Thr Cys Glu Asp Leu Thr Gly Arg Cys Tyr
        435                 440                 445
Cys Arg Pro Asn Phe Ser Gly Glu Arg Cys Asp Val Cys Ala Glu Gly
    450                 455                 460
Phe Thr Gly Phe Pro Ser Cys Tyr Pro Thr Pro Ser Ser Ser Asn Asp
465                 470                 475                 480
```

Thr Arg Glu Gln Val Leu Pro Ala Gly Gln Ile Val Asn Cys Asp Cys
485 490 495
Ser Ala Ala Gly Thr Gln Gly Asn Ala Cys Arg Lys Asp Pro Arg Val
500 505 510
Gly Arg Cys Leu Cys Lys Pro Asn Phe Gln Gly Thr His Cys Glu Leu
515 520 525
Cys Ala Pro Gly Phe Tyr Gly Pro Gly Cys Gln Pro Cys Gln Cys Ser
530 535 540
Ser Pro Gly Val Ala Asp Asp Arg Cys Asp Pro Asp Thr Gly Gln Cys
545 550 555 560
Arg Cys Arg Val Gly Phe Glu Gly Ala Thr Cys Asp Arg Cys Ala Pro
565 570 575
Gly Tyr Phe His Phe Pro Leu Cys Gln Leu Cys Gly Cys Ser Pro Ala
580 585 590
Gly Thr Leu Pro Glu Gly Cys Asp Glu Ala Gly Arg Cys Leu Cys Gln
595 600 605
Pro Glu Phe Ala Gly Pro His Cys Asp Arg Cys Arg Pro Gly Tyr His
610 615 620
Gly Phe Pro Asn Cys Gln Ala Cys Thr Cys Asp Pro Arg Gly Ala Leu
625 630 635 640
Asp Gln Leu Cys Gly Ala Gly Gly Leu Cys Arg Cys Arg Pro Gly Tyr
645 650 655
Thr Gly Thr Ala Cys Gln Glu Cys Ser Pro Gly Phe His Gly Phe Pro
660 665 670
Ser Cys Val Pro Cys His Cys Ser Ala Glu Gly Ser Leu His Ala Ala
675 680 685
Cys Asp Pro Arg Ser Gly Gln Cys Ser Cys Arg Pro Arg Val Thr Gly
690 695 700
Leu Arg Cys Asp Thr Cys Val Pro Gly Ala Tyr Asn Phe Pro Tyr Cys
705 710 715 720
Glu Ala Gly Ser Cys His Pro Ala Gly Leu Ala Pro Val Asp Pro Ala
725 730 735
Leu Pro Glu Ala Gln Val Pro Cys Met Cys Arg Ala His Val Glu Gly
740 745 750
Pro Ser Cys Asp Arg Cys Lys Pro Gly Phe Trp Gly Leu Ser Pro Ser
755 760 765
Asn Pro Glu Gly Cys Thr Arg Cys Ser Cys Asp Leu Arg Gly Thr Leu
770 775 780
Gly Gly Val Ala Glu Cys Gln Pro Gly Thr Gly Gln Cys Phe Cys Lys
785 790 795 800

```
Pro His Val Cys Gly Gln Ala Cys Ala Ser Cys Lys Asp Gly Phe Phe
                805                 810                 815
Gly Leu Asp Gln Ala Asp Tyr Phe Gly Cys Arg Ser Cys Arg Cys Asp
            820                 825                 830
Ile Gly Gly Ala Leu Gly Gln Ser Cys Glu Pro Arg Thr Gly Val Cys
        835                 840                 845
Arg Cys Arg Pro Asn Thr Gln Gly Pro Thr Cys Ser Glu Pro Ala Arg
    850                 855                 860
Asp His Tyr Leu Pro Asp Leu His His Leu Arg Leu Glu Leu Glu Glu
865                 870                 875                 880
Ala Ala Thr Pro Glu Gly His Ala Val Arg Phe Gly Phe Asn Pro Leu
                885                 890                 895
Glu Phe Glu Asn Phe Ser Trp Arg Gly Tyr Ala Gln Met Ala Pro Val
            900                 905                 910
Gln Pro Arg Ile Val Ala Arg Leu Asn Leu Thr Ser Pro Asp Leu Phe
        915                 920                 925
Trp Leu Val Phe Arg Tyr Val Asn Arg Gly Ala Met Ser Val Ser Gly
    930                 935                 940
Arg Val Ser Val Arg Glu Glu Gly Arg Ser Ala Thr Cys Ala Asn Cys
945                 950                 955                 960
Thr Ala Gln Ser Gln Pro Val Ala Phe Pro Pro Ser Thr Glu Pro Ala
                965                 970                 975
Phe Ile Thr Val Pro Gln Arg Gly Phe Gly Glu Pro Phe Val Leu Asn
            980                 985                 990
Pro Gly Thr Trp Ala Leu Arg Val Glu Ala Glu Gly Val Leu Leu Asp
        995                 1000                1005
Tyr Val Val Leu Leu Pro Ser Ala Tyr Tyr Glu Ala Ala Leu Leu Gln
    1010                1015                1020
Leu Arg Val Thr Glu Ala Cys Thr Tyr Arg Pro Ser Ala Gln Gln Ser
1025                1030                1035                1040
Gly Asp Asn Cys Leu Leu Tyr Thr His Leu Pro Leu Asp Gly Phe Pro
                1045                1050                1055
Ser Ala Ala Gly Leu Glu Ala Leu Cys Arg Gln Asp Asn Ser Leu Pro
            1060                1065                1070
Arg Pro Cys Pro Thr Glu Gln Leu Ser Pro Ser His Pro Pro Leu Ile
        1075                1080                1085
Thr Cys Thr Gly Ser Asp Val Asp Val Gln Leu Gln Val Ala Val Pro
    1090                1095                1100
Gln Pro Gly Arg Tyr Ala Leu Val Val Glu Tyr Ala Asn Glu Asp Ala
1105                1110                1115                1120
```

Arg Gln Glu Val Gly Val Ala Val His Thr Pro Gln Arg Ala Pro Gln
1125 1130 1135
Gln Gly Leu Leu Ser Leu His Pro Cys Leu Tyr Ser Thr Leu Cys Arg
1140 1145 1150
Gly Thr Ala Arg Asp Thr Gln Asp His Leu Ala Val Phe His Leu Asp
1155 1160 1165
Ser Glu Ala Ser Val Arg Leu Thr Ala Glu Gln Ala Arg Phe Phe Leu
1170 1175 1180
His Gly Val Thr Leu Val Pro Ile Glu Glu Phe Ser Pro Glu Phe Val
1185 1190 1195 1200
Glu Pro Arg Val Ser Cys Ile Ser Ser His Gly Ala Phe Gly Pro Asn
1205 1210 1215
Ser Ala Ala Cys Leu Pro Ser Arg Phe Pro Lys Pro Pro Gln Pro Ile
1220 1225 1230
Ile Leu Arg Asp Cys Gln Val Ile Pro Leu Pro Pro Gly Leu Pro Leu
1235 1240 1245
Thr His Ala Gln Asp Leu Thr Pro Ala Met Ser Pro Ala Gly Pro Arg
1250 1255 1260
Pro Arg Pro Pro Thr Ala Val Asp Pro Asp Ala Glu Pro Thr Leu Leu
1265 1270 1275 1280
Arg Glu Pro Gln Ala Thr Val Val Phe Thr Thr His Val Pro Thr Leu
1285 1290 1295
Gly Arg Tyr Ala Phe Leu Leu His Gly Tyr Gln Pro Ala His Pro Thr
1300 1305 1310
Phe Pro Val Glu Val Leu Ile Asn Ala Gly Arg Val Trp Gln Gly His
1315 1320 1325
Ala Asn Ala Ser Phe Cys Pro His Gly Tyr Gly Cys Arg Thr Leu Val
1330 1335 1340
Val Cys Glu Gly Gln Ala Leu Leu Asp Val Thr His Ser Glu Leu Thr
1345 1350 1355 1360
Val Thr Val Arg Val Pro Lys Gly Arg Trp Leu Trp Leu Asp Tyr Val
1365 1370 1375
Leu Val Val Pro Glu Asn Val Tyr Ser Phe Gly Tyr Leu Arg Glu Glu
1380 1385 1390
Pro Leu Asp Lys Ser Tyr Asp Phe Ile Ser His Cys Ala Ala Gln Gly
1395 1400 1405
Tyr His Ile Ser Pro Ser Ser Ser Ser Leu Phe Cys Arg Asn Ala Ala
1410 1415 1420
Ala Ser Leu Ser Leu Phe Tyr Asn Asn Gly Ala Arg Pro Cys Gly Cys
1425 1430 1435 1440

```
His Glu Val Gly Ala Thr Gly Pro Thr Cys Glu Pro Phe Gly Gly Gln
               1445                1450                1455
Cys Pro Cys His Ala His Val Ile Gly Arg Asp Cys Ser Arg Cys Ala
            1460                1465                1470
Thr Gly Tyr Trp Gly Phe Pro Asn Cys Arg Pro Cys Asp Cys Gly Ala
        1475                1480                1485
Arg Leu Cys Asp Glu Leu Thr Gly Gln Cys Ile Cys Pro Pro Arg Thr
    1490                1495                1500
Ile Pro Pro Asp Cys Leu Leu Cys Gln Pro Gln Thr Phe Gly Cys His
1505                1510                1515                1520
Pro Leu Val Gly Cys Glu Glu Cys Asn Cys Ser Gly Pro Gly Ile Gln
               1525                1530                1535
Glu Leu Thr Asp Pro Thr Cys Asp Thr Asp Ser Gly Gln Cys Lys Cys
            1540                1545                1550
Arg Pro Asn Val Thr Gly Arg Arg Cys Asp Thr Cys Ser Pro Gly Phe
        1555                1560                1565
His Gly Tyr Pro Arg Cys Arg Pro Cys Asp Cys His Glu Ala Gly Thr
    1570                1575                1580
Ala Pro Gly Val Cys Asp Pro Leu Thr Gly Gln Cys Tyr Cys Lys Glu
1585                1590                1595                1600
Asn Val Gln Gly Pro Lys Cys Asp Gln Cys Ser Leu Gly Thr Phe Ser
               1605                1610                1615
Leu Asp Ala Ala Asn Pro Lys Gly Cys Thr Arg Cys Phe Cys Phe Gly
            1620                1625                1630
Ala Thr Glu Arg Cys Arg Ser Ser Ser Tyr Thr Arg Gln Glu Phe Val
        1635                1640                1645
Asp Met Glu Gly Trp Val Leu Leu Ser Thr Asp Arg Gln Val Val Pro
    1650                1655                1660
His Glu Arg Gln Pro Gly Thr Glu Met Leu Arg Ala Asp Leu Arg His
1665                1670                1675                1680
Val Pro Glu Ala Val Pro Glu Ala Phe Pro Glu Leu Tyr Trp Gln Ala
               1685                1690                1695
Pro Pro Ser Tyr Leu Gly Asp Arg Val Ser Ser Tyr Gly Gly Thr Leu
            1700                1705                1710
Arg Tyr Glu Leu His Ser Glu Thr Gln Arg Gly Asp Val Phe Val Pro
        1715                1720                1725
Met Glu Ser Arg Pro Asp Val Val Leu Gln Gly Asn Gln Met Ser Ile
    1730                1735                1740
Thr Phe Leu Glu Pro Ala Tyr Pro Thr Pro Gly His Val His Arg Gly
1745                1750                1755                1760
```

```
Gln Leu Gln Leu Val Glu Gly Asn Phe Arg His Thr Glu Thr Arg Asn
               1765                1770                1775
Thr Val Ser Arg Glu Glu Leu Met Met Val Leu Ala Ser Leu Glu Gln
            1780                1785                1790
Leu Gln Ile Arg Ala Leu Phe Ser Gln Ile Ser Ser Ala Val Phe Leu
        1795                1800                1805
Arg Arg Val Ala Leu Glu Val Ala Ser Pro Ala Gly Gln Gly Ala Leu
    1810                1815                1820
Ala Ser Asn Val Glu Leu Cys Leu Cys Pro Ala Ser Tyr Arg Gly Asp
1825                1830                1835                1840
Ser Cys Gln Glu Cys Ala Pro Gly Phe Tyr Arg Asp Val Lys Gly Leu
               1845                1850                1855
Phe Leu Gly Arg Cys Val Pro Cys Gln Cys His Gly His Ser Asp Arg
            1860                1865                1870
Cys Leu Pro Gly Ser Gly Val Cys Val Asp Cys Gln His Asn Thr Glu
        1875                1880                1885
Gly Ala His Cys Glu Arg Cys Gln Ala Gly Phe Val Ser Ser Arg Asp
    1890                1895                1900
Asp Pro Ser Ala Pro Cys Val Ser Cys Pro Cys Pro Leu Ser Val Pro
1905                1910                1915                1920
Ser Asn Asn Phe Ala Glu Gly Cys Val Leu Arg Gly Gly Arg Thr Gln
               1925                1930                1935
Cys Leu Cys Lys Pro Gly Tyr Ala Gly Ala Ser Cys Glu Arg Cys Ala
            1940                1945                1950
Pro Gly Phe Phe Gly Asn Pro Leu Val Leu Gly Ser Ser Cys Gln Pro
        1955                1960                1965
Cys Asp Cys Ser Gly Asn Gly Asp Pro Asn Leu Leu Phe Ser Asp Cys
    1970                1975                1980
Asp Pro Leu Thr Gly Ala Cys Arg Gly Cys Leu Arg His Thr Thr Gly
1985                1990                1995                2000
Pro Arg Cys Glu Ile Cys Ala Pro Gly Phe Tyr Gly Asn Ala Leu Leu
               2005                2010                2015
Pro Gly Asn Cys Thr Arg Cys Asp Cys Thr Pro Cys Gly Thr Glu Ala
            2020                2025                2030
Cys Asp Pro His Ser Gly His Cys Leu Cys Lys Ala Gly Val Thr Gly
        2035                2040                2045
Arg Arg Cys Asp Arg Cys Gln Glu Gly His Phe Gly Phe Asp Gly Cys
    2050                2055                2060
Gly Gly Cys Arg Pro Cys Ala Cys Gly Pro Ala Ala Glu Gly Ser Glu
2065                2070                2075                2080
```

Cys His Pro Gln Ser Gly Gln Cys His Cys Arg Pro Gly Thr Met Gly
2085 2090 2095
Pro Gln Cys Arg Glu Cys Ala Pro Gly Tyr Trp Gly Leu Pro Glu Gln
2100 2105 2110
Gly Cys Arg Arg Cys Gln Cys Pro Gly Gly Arg Cys Asp Pro His Thr
2115 2120 2125
Gly Arg Cys Asn Cys Pro Pro Gly Leu Ser Gly Glu Arg Cys Asp Thr
2130 2135 2140
Cys Ser Gln Gln His Gln Val Pro Val Pro Gly Gly Pro Val Gly His
2145 2150 2155 2160
Ser Ile His Cys Glu Val Cys Asp His Cys Val Val Leu Leu Leu Asp
2165 2170 2175
Asp Leu Glu Arg Ala Gly Ala Leu Leu Pro Ala Ile His Glu Gln Leu
2180 2185 2190
Arg Gly Ile Asn Ala Ser Ser Met Ala Trp Ala Arg Leu His Arg Leu
2195 2200 2205
Asn Ala Ser Ile Ala Asp Leu Gln Ser Gln Leu Arg Ser Pro Leu Gly
2210 2215 2220
Pro Arg His Glu Thr Ala Gln Gln Leu Glu Val Leu Glu Gln Gln Ser
2225 2230 2235 2240
Thr Ser Leu Gly Gln Asp Ala Arg Arg Leu Gly Gly Gln Ala Ala Val
2245 2250 2255
Gly Thr Arg Asp Gln Ala Ser Gln Leu Leu Ala Gly Thr Glu Ala Thr
2260 2265 2270
Leu Gly His Ala Lys Thr Leu Leu Ala Ala Ile Arg Ala Val Asp Arg
2275 2280 2285
Thr Leu Ser Glu Leu Met Ser Gln Thr Gly His Leu Gly Leu Ala Asn
2290 2295 2300
Ala Ser Ala Pro Ser Gly Glu Gln Leu Leu Arg Thr Leu Ala Glu Val
2305 2310 2315 2320
Glu Arg Leu Leu Trp Glu Met Arg Ala Arg Asp Leu Gly Ala Pro Gln
2325 2330 2335
Ala Ala Ala Glu Ala Glu Leu Ala Ala Ala Gln Arg Leu Leu Ala Arg
2340 2345 2350
Val Gln Glu Gln Leu Ser Ser Leu Trp Glu Glu Asn Gln Ala Leu Ala
2355 2360 2365
Thr Gln Thr Arg Asp Arg Leu Ala Gln His Glu Ala Gly Leu Met Asp
2370 2375 2380
Leu Arg Glu Ala Leu Asn Arg Ala Val Asp Ala Thr Arg Glu Ala Gln
2385 2390 2395 2400

Glu Leu Asn Ser Arg Asn Gln Glu Arg Leu Glu Glu Ala Leu Gln Arg
2405 2410 2415
Lys Gln Glu Leu Ser Arg Asp Asn Ala Thr Leu Gln Ala Thr Leu His
2420 2425 2430
Ala Ala Arg Asp Thr Leu Ala Ser Val Phe Arg Leu Leu His Ser Leu
2435 2440 2445
Asp Gln Ala Lys Glu Glu Leu Glu Arg Leu Ala Ala Ser Leu Asp Gly
2450 2455 2460
Ala Arg Thr Pro Leu Leu Gln Arg Met Gln Thr Phe Ser Pro Ala Gly
2465 2470 2475 2480
Ser Lys Leu Arg Leu Val Glu Ala Ala Glu Ala His Ala Gln Gln Leu
2485 2490 2495
Gly Gln Leu Ala Leu Asn Leu Ser Ser Ile Ile Leu Asp Val Asn Gln
2500 2505 2510
Asp Arg Leu Thr Gln Arg Ala Ile Glu Ala Ser Asn Ala Tyr Ser Arg
2515 2520 2525
Ile Leu Gln Ala Val Gln Ala Ala Glu Asp Ala Ala Gly Gln Ala Leu
2530 2535 2540
Gln Gln Ala Asp His Thr Trp Ala Thr Val Val Arg Gln Gly Leu Val
2545 2550 2555 2560
Asp Arg Ala Gln Gln Leu Leu Ala Asn Ser Thr Ala Leu Glu Glu Ala
2565 2570 2575
Met Leu Gln Glu Gln Gln Arg Leu Gly Leu Val Trp Ala Ala Leu Gln
2580 2585 2590
Gly Ala Arg Thr Gln Leu Arg Asp Val Arg Ala Lys Lys Asp Gln Leu
2595 2600 2605
Glu Ala His Ile Gln Ala Ala Gln Ala Met Leu Ala Met Asp Thr Asp
2610 2615 2620
Glu Thr Ser Lys Lys Ile Ala His Ala Lys Ala Val Ala Ala Glu Ala
2625 2630 2635 2640
Gln Asp Thr Ala Thr Arg Val Gln Ser Gln Leu Gln Ala Met Gln Glu
2645 2650 2655
Asn Val Glu Arg Trp Gln Gly Gln Tyr Glu Gly Leu Arg Gly Gln Asp
2660 2665 2670
Leu Gly Gln Ala Val Leu Asp Ala Gly His Ser Val Ser Thr Leu Glu
2675 2680 2685
Lys Thr Leu Pro Gln Leu Leu Ala Lys Leu Ser Ile Leu Glu Asn Arg
2690 2695 2700
Gly Val His Asn Ala Ser Leu Ala Leu Ser Ala Ser Ile Gly Arg Val
2705 2710 2715 2720

Arg Glu Leu Ile Ala Gln Ala Arg Gly Ala Ala Ser Lys Val Lys Val
2725 2730 2735
Pro Met Lys Phe Asn Gly Arg Ser Gly Val Gln Leu Arg Thr Pro Arg
2740 2745 2750
Asp Leu Ala Asp Leu Ala Ala Tyr Thr Ala Leu Lys Phe Tyr Leu Gln
2755 2760 2765
Gly Pro Glu Pro Glu Pro Gly Gln Gly Thr Glu Asp Arg Phe Val Met
2770 2775 2780
Tyr Met Gly Ser Arg Gln Ala Thr Gly Asp Tyr Met Gly Val Ser Leu
2785 2790 2795 2800
Arg Asp Lys Lys Val His Trp Val Tyr Gln Leu Gly Glu Ala Gly Pro
2805 2810 2815
Ala Val Leu Ser Ile Asp Glu Asp Ile Gly Glu Gln Phe Ala Ala Val
2820 2825 2830
Ser Leu Asp Arg Thr Leu Gln Phe Gly His Met Ser Val Thr Val Glu
2835 2840 2845
Arg Gln Met Ile Gln Glu Thr Lys Gly Asp Thr Val Ala Pro Gly Ala
2850 2855 2860
Glu Gly Leu Leu Asn Leu Arg Pro Asp Asp Phe Val Phe Tyr Val Gly
2865 2870 2875 2880
Gly Tyr Pro Ser Thr Phe Thr Pro Pro Pro Leu Leu Arg Phe Pro Gly
2885 2890 2895
Tyr Arg Gly Cys Ile Glu Met Asp Thr Leu Asn Glu Glu Val Val Ser
2900 2905 2910
Leu Tyr Asn Phe Glu Arg Thr Phe Gln Leu Asp Thr Ala Val Asp Arg
2915 2920 2925
Pro Cys Ala Arg Ser Lys Ser Thr Gly Asp Pro Trp Leu Thr Asp Gly
2930 2935 2940
Ser Tyr Leu Asp Gly Thr Gly Phe Ala Arg Ile Ser Phe Asp Ser Gln
2945 2950 2955 2960
Ile Ser Thr Thr Lys Arg Phe Glu Gln Glu Leu Arg Leu Val Ser Tyr
2965 2970 2975
Ser Gly Val Leu Phe Phe Leu Lys Gln Gln Ser Gln Phe Leu Cys Leu
2980 2985 2990
Ala Val Gln Glu Gly Ser Leu Val Leu Leu Tyr Asp Phe Gly Ala Gly
2995 3000 3005
Leu Lys Lys Ala Val Pro Leu Gln Pro Pro Pro Pro Leu Thr Ser Ala
3010 3015 3020
Ser Lys Ala Ile Gln Val Phe Leu Leu Gly Gly Ser Arg Lys Arg Val
3025 3030 3035 3040

Leu Val Arg Val Glu Arg Ala Thr Val Tyr Ser Val Glu Gln Asp Asn
3045 3050 3055
Asp Leu Glu Leu Ala Asp Ala Tyr Tyr Leu Gly Gly Val Pro Pro Asp
3060 3065 3070
Gln Leu Pro Pro Ser Leu Arg Arg Leu Phe Pro Thr Gly Gly Ser Val
3075 3080 3085
Arg Gly Cys Val Lys Gly Ile Lys Ala Leu Gly Lys Tyr Val Asp Leu
3090 3095 3100
Lys Arg Leu Asn Thr Thr Gly Val Ser Ala Gly Cys Thr Ala Asp Leu
3105 3110 3115 3120
Leu Val Gly Arg Ala Met Thr Phe His Gly His Gly Phe Leu Arg Leu
3125 3130 3135
Ala Leu Ser Asn Val Ala Pro Leu Thr Gly Asn Val Tyr Ser Gly Phe
3140 3145 3150
Gly Phe His Ser Ala Gln Asp Ser Ala Leu Leu Tyr Tyr Arg Ala Ser
3155 3160 3165
Pro Asp Gly Leu Cys Gln Val Ser Leu Gln Gln Gly Arg Val Ser Leu
3170 3175 3180
Gln Leu Leu Arg Thr Glu Val Lys Thr Gln Ala Gly Phe Ala Asp Gly
3185 3190 3195 3200
Ala Pro His Tyr Val Ala Phe Tyr Ser Asn Ala Thr Gly Val Trp Leu
3205 3210 3215
Tyr Val Asp Asp Gln Leu Gln Gln Met Lys Pro His Arg Gly Pro Pro
3220 3225 3230
Pro Glu Leu Gln Pro Gln Pro Glu Gly Pro Pro Arg Leu Leu Leu Gly
3235 3240 3245
Gly Leu Pro Glu Ser Gly Thr Ile Tyr Asn Phe Ser Gly Cys Ile Ser
3250 3255 3260
Asn Val Phe Val Gln Arg Leu Leu Gly Pro Gln Arg Val Phe Asp Leu
3265 3270 3275 3280
Gln Gln Asn Leu Gly Ser Val Asn Val Ser Thr Gly Cys Ala Pro Ala
3285 3290 3295
Leu Gln Ala Gln Thr Pro Gly Leu Gly Pro Arg Gly Leu Gln Ala Thr
3300 3305 3310
Ala Arg Lys Ala Ser Arg Arg Ser Arg Gln Pro Ala Arg His Pro Ala
3315 3320 3325
Cys Met Leu Pro Pro His Leu Arg Thr Thr Arg Asp Ser Tyr Gln Phe
3330 3335 3340
Gly Gly Ser Leu Ser Ser His Leu Glu Phe Val Gly Ile Leu Ala Arg
3345 3350 3355 3360

```
His Arg Asn Trp Pro Ser Leu Ser Met His Val Leu Pro Arg Ser Ser
                3365                3370                3375
Arg Gly Leu Leu Leu Phe Thr Ala Arg Leu Arg Pro Gly Ser Pro Ser
            3380                3385                3390
Leu Ala Leu Phe Leu Ser Asn Gly His Phe Val Ala Gln Met Glu Gly
        3395                3400                3405
Leu Gly Thr Arg Leu Arg Ala Gln Ser Arg Gln Arg Ser Arg Pro Gly
    3410                3415                3420
Arg Trp His Lys Val Ser Val Arg Trp Glu Lys Asn Arg Ile Leu Leu
3425                3430                3435                3440
Val Thr Asp Gly Ala Arg Ala Trp Ser Gln Glu Gly Pro His Arg Gln
                3445                3450                3455
His Gln Gly Ala Glu His Pro Gln Pro His Thr Leu Phe Val Gly Gly
            3460                3465                3470
Leu Pro Ala Ser Ser His Ser Ser Lys Leu Pro Val Thr Val Gly Phe
        3475                3480                3485
Ser Gly Cys Val Lys Arg Leu Arg Leu His Gly Arg Pro Leu Gly Ala
    3490                3495                3500
Pro Thr Arg Met Ala Gly Val Thr Pro Cys Ile Leu Gly Pro Leu Glu
3505                3510                3515                3520
Ala Gly Leu Phe Phe Pro Gly Ser Gly Gly Val Ile Thr Leu Asp Leu
                3525                3530                3535
Pro Gly Ala Thr Leu Pro Asp Val Gly Leu Glu Leu Glu Val Arg Pro
            3540                3545                3550
Leu Ala Val Thr Gly Leu Ile Phe His Leu Gly Gln Ala Arg Thr Pro
        3555                3560                3565
Pro Tyr Leu Gln Leu Gln Val Thr Glu Lys Gln Val Leu Leu Arg Ala
    3570                3575                3580
Asp Asp Gly Ala Gly Glu Phe Ser Thr Ser Val Thr Arg Pro Ser Val
3585                3590                3595                3600
Leu Cys Asp Gly Gln Trp His Arg Leu Ala Val Met Lys Ser Gly Asn
                3605                3610                3615
Val Leu Arg Leu Glu Val Asp Ala Gln Ser Asn His Thr Val Gly Pro
            3620                3625                3630
Leu Leu Ala Ala Ala Ala Gly Ala Pro Ala Pro Leu Tyr Leu Gly Gly
        3635                3640                3645
Leu Pro Glu Pro Met Ala Val Gln Pro Trp Pro Pro Ala Tyr Cys Gly
    3650                3655                3660
Cys Met Arg Arg Leu Ala Val Asn Arg Ser Pro Val Ala Met Thr Arg
3665                3670                3675                3680
```

```
Ser Val Glu Val His Gly Ala Val Gly Ala Ser Gly Cys Pro Ala Ala
                3685                3690                3695


<210> 32
<211> 337
<212> PRT
<213> Homo sapiens

<400> 32
Met Thr Asn Asn Ser Gly Ser Lys Ala Glu Leu Val Val Gly Gly Lys
 1               5                  10                  15
Tyr Lys Leu Val Arg Lys Ile Gly Ser Gly Ser Phe Gly Asp Val Tyr
            20                  25                  30
Leu Gly Ile Thr Thr Thr Asn Gly Glu Asp Val Ala Val Lys Leu Glu
        35                  40                  45
Ser Gln Lys Val Lys His Pro Gln Leu Leu Tyr Glu Ser Lys Leu Tyr
    50                  55                  60
Thr Ile Leu Gln Gly Gly Val Gly Ile Pro His Met His Trp Tyr Gly
65                  70                  75                  80
Gln Glu Lys Asp Asn Asn Val Leu Val Met Asp Leu Leu Gly Pro Ser
                85                  90                  95
Leu Glu Asp Leu Phe Asn Phe Cys Ser Arg Arg Phe Thr Met Lys Thr
            100                 105                 110
Val Leu Met Leu Ala Asp Gln Met Ile Ser Arg Ile Glu Tyr Val His
        115                 120                 125
Thr Lys Asn Phe Leu His Arg Asp Ile Lys Pro Asp Asn Phe Leu Met
    130                 135                 140
Gly Thr Gly Arg His Cys Asn Lys Leu Phe Leu Ile Asp Phe Gly Leu
145                 150                 155                 160
Ala Lys Lys Tyr Arg Asp Asn Arg Thr Arg Gln His Ile Pro Tyr Arg
                165                 170                 175
Glu Asp Lys His Leu Ile Gly Thr Val Arg Tyr Ala Ser Ile Asn Ala
            180                 185                 190
His Leu Gly Ile Glu Gln Ser Arg Arg Asp Asp Met Glu Ser Leu Gly
        195                 200                 205
Tyr Val Phe Met Tyr Phe Asn Arg Thr Ser Leu Pro Trp Gln Gly Leu
    210                 215                 220
Arg Ala Met Thr Lys Lys Gln Lys Tyr Glu Lys Ile Ser Glu Lys Lys
225                 230                 235                 240
```

```
Met Ser Thr Pro Val Glu Val Leu Cys Lys Gly Phe Pro Ala Glu Phe
                245                 250                 255
Ala Met Tyr Leu Asn Tyr Cys Arg Gly Leu Arg Phe Glu Glu Val Pro
            260                 265                 270
Asp Tyr Met Tyr Leu Arg Gln Leu Phe Arg Ile Leu Phe Arg Thr Leu
        275                 280                 285
Asn His Gln Tyr Asp Tyr Thr Phe Asp Trp Thr Met Leu Lys Gln Lys
    290                 295                 300
Ala Ala Gln Gln Ala Ala Ser Ser Ser Gly Gln Gly Gln Gln Ala Gln
305                 310                 315                 320
Thr Gln Thr Gly Lys Gln Thr Glu Lys Asn Lys Asn Asn Val Lys Asp
                325                 330                 335
Asn
```

<210> 33
<211> 888
<212> PRT
<213> Homo sapiens

<400> 33

```
Met Glu Ser Leu Leu Leu Pro Val Leu Leu Leu Leu Ala Ile Leu Trp
 1               5                  10                  15
Thr Gln Ala Ala Ala Leu Ile Asn Leu Lys Tyr Ser Val Glu Glu Glu
            20                  25                  30
Gln Arg Ala Gly Thr Val Ile Ala Asn Val Ala Lys Asp Ala Arg Glu
        35                  40                  45
Ala Gly Phe Ala Leu Asp Pro Arg Gln Ala Ser Ala Phe Arg Val Val
    50                  55                  60
Ser Asn Ser Ala Pro His Leu Val Asp Ile Asn Pro Ser Ser Gly Leu
65                  70                  75                  80
Leu Val Thr Lys Gln Lys Ile Asp Arg Asp Leu Leu Cys Arg Gln Ser
                85                  90                  95
Pro Lys Cys Ile Ile Ser Leu Glu Val Met Ser Ser Ser Met Glu Ile
            100                 105                 110
Cys Val Ile Lys Val Glu Ile Lys Asp Leu Asn Asp Asn Ala Pro Ser
        115                 120                 125
Phe Pro Ala Ala Gln Ile Glu Leu Glu Ile Ser Glu Ala Ala Ser Pro,
    130                 135                 140
```

Gly Thr Arg Ile Pro Leu Asp Ser Ala Tyr Asp Pro Asp Ser Gly Ser
145 150 155 160
Phe Gly Val Gln Thr Tyr Glu Leu Thr Pro Asn Glu Leu Phe Gly Leu
165 170 175
Glu Ile Lys Thr Arg Gly Asp Gly Ser Arg Phe Ala Glu Leu Val Val
180 185 190
Glu Lys Ser Leu Asp Arg Glu Thr Gln Ser His Tyr Ser Phe Arg Ile
195 200 205
Thr Ala Leu Asp Gly Gly Asp Pro Pro Arg Leu Gly Thr Val Gly Leu
210 215 220
Ser Ile Lys Val Thr Asp Ser Asn Asp Asn Asn Pro Val Phe Ser Glu
225 230 235 240
Ser Thr Tyr Ala Val Ser Val Pro Glu Asn Ser Pro Pro Asn Thr Pro
245 250 255
Val Ile Arg Leu Asn Ala Ser Asp Pro Asp Glu Gly Thr Asn Gly Gln
260 265 270
Val Val Tyr Ser Phe Tyr Gly Tyr Val Asn Asp Arg Thr Arg Glu Leu
275 280 285
Phe Gln Ile Asp Pro His Ser Gly Leu Val Thr Val Thr Gly Ala Leu
290 295 300
Asp Tyr Glu Glu Gly His Val Tyr Glu Leu Asp Val Gln Ala Lys Asp
305 310 315 320
Leu Gly Pro Asn Ser Ile Pro Ala His Cys Lys Val Thr Val Ser Val
325 330 335
Leu Asp Thr Asn Asp Asn Pro Pro Val Ile Asn Leu Leu Ser Val Asn
340 345 350
Ser Glu Leu Val Glu Val Ser Glu Ser Ala Pro Pro Gly Tyr Val Ile
355 360 365
Ala Leu Val Arg Val Ser Asp Arg Asp Ser Gly Leu Asn Gly Arg Val
370 375 380
Gln Cys Arg Leu Leu Gly Asn Val Pro Phe Arg Leu Gln Glu Tyr Glu
385 390 395 400
Ser Phe Ser Thr Ile Leu Val Asp Gly Arg Leu Asp Arg Glu Gln His
405 410 415
Asp Gln Tyr Asn Leu Thr Ile Gln Ala Arg Asp Gly Gly Val Pro Met
420 425 430
Leu Gln Ser Ala Lys Ser Phe Thr Val Leu Ile Thr Asp Glu Asn Asp
435 440 445
Asn His Pro His Phe Ser Lys Pro Tyr Tyr Gln Val Ile Val Gln Glu
450 455 460

```
Asn Asn Thr Pro Gly Ala Tyr Leu Leu Ser Val Ser Ala Arg Asp Pro
465                 470                 475                 480
Asp Leu Gly Leu Asn Gly Ser Val Ser Tyr Gln Ile Val Pro Ser Gln
                485                 490                 495
Val Arg Asp Met Pro Val Phe Thr Tyr Val Ser Ile Asn Pro Asn Ser
            500                 505                 510
Gly Asp Ile Tyr Ala Leu Arg Ser Phe Asn His Glu Gln Thr Lys Ala
        515                 520                 525
Phe Glu Phe Lys Val Leu Ala Lys Asp Gly Gly Leu Pro Ser Leu Gln
    530                 535                 540
Ser Asn Ala Thr Val Arg Val Ile Ile Leu Asp Val Asn Asp Asn Thr
545                 550                 555                 560
Pro Val Ile Thr Ala Pro Pro Leu Ile Asn Gly Thr Ala Glu Val Tyr
                565                 570                 575
Ile Pro Arg Asn Ser Gly Ile Gly Tyr Leu Val Thr Val Val Lys Ala
            580                 585                 590
Glu Asp Tyr Asp Glu Gly Glu Asn Gly Arg Val Thr Tyr Asp Met Thr
        595                 600                 605
Glu Gly Asp Arg Gly Phe Phe Glu Ile Asp Gln Val Asn Gly Glu Val
    610                 615                 620
Arg Thr Thr Arg Thr Phe Gly Glu Ser Ser Lys Ser Ser Tyr Glu Leu
625                 630                 635                 640
Ile Val Val Ala His Asp His Gly Lys Thr Ser Leu Ser Ala Ser Ala
                645                 650                 655
Leu Val Leu Ile Tyr Leu Ser Pro Ala Leu Asp Ala Gln Glu Ser Met
            660                 665                 670
Gly Ser Val Asn Leu Ser Leu Ile Phe Ile Ile Ala Leu Gly Ser Ile
        675                 680                 685
Ala Gly Ile Leu Phe Val Thr Met Ile Phe Val Ala Ile Lys Cys Lys
    690                 695                 700
Arg Asp Asn Lys Glu Ile Arg Thr Tyr Asn Cys Ser Asn Cys Leu Thr
705                 710                 715                 720
Ile Thr Cys Leu Leu Gly Cys Phe Ile Lys Gly Gln Asn Ser Lys Cys
                725                 730                 735
Leu His Cys Ile Ser Val Ser Pro Ile Ser Glu Glu Gln Asp Lys Lys
            740                 745                 750
Thr Glu Glu Lys Val Ser Leu Arg Gly Lys Arg Ile Ala Glu Tyr Ser
        755                 760                 765
Tyr Gly His Gln Lys Lys Ser Ser Lys Lys Lys Lys Ile Ser Lys Asn
    770                 775                 780
```

```
Asp Ile Arg Leu Val Pro Arg Asp Val Glu Glu Thr Asp Lys Met Asn
785                 790                 795                 800
Val Val Ser Cys Ser Ser Leu Thr Ser Ser Leu Asn Tyr Phe Asp Tyr
                805                 810                 815
His Gln Gln Thr Leu Pro Leu Gly Cys Arg Arg Ser Glu Ser Thr Phe
            820                 825                 830
Leu Asn Val Glu Asn Gln Asn Thr Arg Asn Thr Ser Ala Asn His Ile
        835                 840                 845
Tyr His His Ser Phe Asn Ser Gln Gly Pro Gln Gln Pro Asp Leu Ile
    850                 855                 860
Ile Asn Gly Val Pro Leu Pro Glu Val Ser Ala Ala Lys Trp Leu Cys
865                 870                 875                 880
Glu Val Leu Pro Gly Leu Leu Leu
                885
```

<210> 34
<211> 855
<212> PRT
<213> Homo sapiens

<400> 34

```
Met Glu Ser Leu Leu Leu Pro Val Leu Leu Leu Leu Ala Ile Leu Trp
 1               5                  10                  15
Thr Gln Ala Ala Ala Leu Ile Asn Leu Lys Tyr Ser Val Glu Glu Glu
            20                  25                  30
Gln Arg Ala Gly Thr Val Ile Ala Asn Val Ala Lys Asp Ala Arg Glu
        35                  40                  45
Ala Gly Phe Ala Leu Asp Pro Arg Gln Ala Ser Ala Phe Arg Val Val
    50                  55                  60
Ser Asn Ser Ala Pro His Leu Val Asp Ile Asn Pro Ser Ser Gly Leu
65                  70                  75                  80
Leu Val Thr Lys Gln Lys Ile Asp Arg Asp Leu Leu Cys Arg Gln Ser
                85                  90                  95
Pro Lys Cys Ile Ile Ser Leu Glu Val Met Ser Ser Ser Met Glu Ile
            100                 105                 110
Cys Val Ile Lys Val Glu Ile Lys Asp Leu Asn Asp Asn Ala Pro Ser
        115                 120                 125
Phe Pro Ala Ala Gln Ile Glu Leu Glu Ile Ser Glu Ala Ala Ser Pro
    130                 135                 140
```

```
Gly Thr Arg Ile Pro Leu Asp Ser Ala Tyr Asp Pro Asp Ser Gly Ser
145                 150                 155                 160
Phe Gly Val Gln Thr Tyr Glu Leu Thr Pro Asn Glu Leu Phe Gly Leu
                165                 170                 175
Glu Ile Lys Thr Arg Gly Asp Gly Ser Arg Phe Ala Glu Leu Val Val
            180                 185                 190
Glu Lys Ser Leu Asp Arg Glu Thr Gln Ser His Tyr Ser Phe Arg Ile
        195                 200                 205
Thr Ala Leu Asp Gly Gly Asp Pro Pro Arg Leu Gly Thr Val Gly Leu
    210                 215                 220
Ser Ile Lys Val Thr Asp Ser Asn Asp Asn Asn Pro Val Phe Ser Glu
225                 230                 235                 240
Ser Thr Tyr Ala Val Ser Val Pro Glu Asn Ser Pro Pro Asn Thr Pro
                245                 250                 255
Val Ile Arg Leu Asn Ala Ser Asp Pro Asp Glu Gly Thr Asn Gly Gln
            260                 265                 270
Val Val Tyr Ser Phe Tyr Gly Tyr Val Asn Asp Arg Thr Arg Glu Leu
        275                 280                 285
Phe Gln Ile Asp Pro His Ser Gly Leu Val Thr Val Thr Gly Ala Leu
    290                 295                 300
Asp Tyr Glu Glu Gly His Val Tyr Glu Leu Asp Val Gln Ala Lys Asp
305                 310                 315                 320
Leu Gly Pro Asn Ser Ile Pro Ala His Cys Lys Val Thr Val Ser Val
                325                 330                 335
Leu Asp Thr Asn Asp Asn Pro Pro Val Ile Asn Leu Leu Ser Val Asn
            340                 345                 350
Ser Glu Leu Val Glu Val Ser Glu Ser Ala Pro Pro Gly Tyr Val Ile
        355                 360                 365
Ala Leu Val Arg Val Ser Asp Arg Asp Ser Gly Leu Asn Gly Arg Val
    370                 375                 380
Gln Cys Arg Leu Leu Gly Asn Val Pro Phe Arg Leu Gln Glu Tyr Glu
385                 390                 395                 400
Ser Phe Ser Thr Ile Leu Val Asp Gly Arg Leu Asp Arg Glu Gln His
                405                 410                 415
Asp Gln Tyr Asn Leu Thr Ile Gln Ala Arg Asp Gly Gly Val Pro Met
            420                 425                 430
Leu Gln Ser Ala Lys Ser Phe Thr Val Leu Ile Thr Asp Glu Asn Asp
        435                 440                 445
Asn His Pro His Phe Ser Lys Pro Tyr Tyr Gln Val Ile Val Gln Glu
    450                 455                 460
```

```
Asn Asn Thr Pro Gly Ala Tyr Leu Leu Ser Val Ser Ala Arg Asp Pro
465                 470                 475                 480
Asp Leu Gly Leu Asn Gly Ser Val Ser Tyr Gln Ile Val Pro Ser Gln
                485                 490                 495
Val Arg Asp Met Pro Val Phe Thr Tyr Val Ser Ile Asn Pro Asn Ser
            500                 505                 510
Gly Asp Ile Tyr Ala Leu Arg Ser Phe Asn His Glu Gln Thr Lys Ala
        515                 520                 525
Phe Glu Phe Lys Val Leu Ala Lys Asp Gly Gly Leu Pro Ser Leu Gln
    530                 535                 540
Ser Asn Ala Thr Val Arg Val Ile Ile Leu Asp Val Asn Asp Asn Thr
545                 550                 555                 560
Pro Val Ile Thr Ala Pro Pro Leu Ile Asn Gly Thr Ala Glu Val Tyr
                565                 570                 575
Ile Pro Arg Asn Ser Gly Ile Gly Tyr Leu Val Thr Val Val Lys Ala
            580                 585                 590
Glu Asp Tyr Asp Glu Gly Glu Asn Gly Arg Val Thr Tyr Asp Met Thr
        595                 600                 605
Glu Gly Asp Arg Gly Phe Phe Glu Ile Asp Gln Val Asn Gly Glu Val
    610                 615                 620
Arg Thr Thr Arg Thr Phe Gly Glu Ser Ser Lys Ser Ser Tyr Glu Leu
625                 630                 635                 640
Ile Val Val Ala His Asp His Gly Lys Thr Ser Leu Ser Ala Ser Ala
                645                 650                 655
Leu Val Leu Ile Tyr Leu Ser Pro Ala Leu Asp Ala Gln Glu Ser Met
            660                 665                 670
Gly Ser Val Asn Leu Ser Leu Ile Phe Ile Ile Ala Leu Gly Ser Ile
        675                 680                 685
Ala Gly Ile Leu Phe Val Thr Met Ile Phe Val Ala Ile Lys Cys Lys
    690                 695                 700
Arg Asp Asn Lys Glu Ile Arg Thr Tyr Asn Cys Arg Ile Ala Glu Tyr
705                 710                 715                 720
Ser Tyr Gly His Gln Lys Lys Ser Ser Lys Lys Lys Lys Ile Ser Lys
                725                 730                 735
Asn Asp Ile Arg Leu Val Pro Arg Asp Val Glu Glu Thr Asp Lys Met
            740                 745                 750
Asn Val Val Ser Cys Ser Ser Leu Thr Ser Ser Leu Asn Tyr Phe Asp
        755                 760                 765
Tyr His Gln Gln Thr Leu Pro Leu Gly Cys Arg Arg Ser Glu Ser Thr
    770                 775                 780
```

```
Phe Leu Asn Val Glu Asn Gln Asn Thr Arg Asn Thr Ser Ala Asn His
785                 790                 795                 800
Ile Tyr His His Ser Phe Asn Ser Gln Gly Pro Gln Gln Pro Asp Leu
                805                 810                 815
Ile Ile Asn Gly Val Pro Leu Pro Glu Thr Glu Asn Tyr Ser Phe Asp
            820                 825                 830
Ser Asn Tyr Val Asn Ser Arg Ala His Leu Ile Lys Arg Tyr Val Gly
        835                 840                 845
Leu Leu Ala Tyr Cys Cys Asn
    850                 855
```

<210> 35
<211> 329
<212> PRT
<213> Homo sapiens

<400> 35

```
Met Val Thr Lys Ala Phe Val Leu Leu Ala Ile Phe Ala Glu Ala Ser
 1               5                  10                  15
Ala Lys Ser Cys Ala Pro Asn Lys Ala Asp Val Ile Leu Val Phe Cys
            20                  25                  30
Tyr Pro Lys Thr Ile Ile Thr Lys Ile Pro Glu Cys Pro Tyr Gly Trp
        35                  40                  45
Glu Val His Gln Leu Ala Leu Gly Gly Leu Cys Tyr Asn Gly Val His
    50                  55                  60
Glu Gly Gly Tyr Tyr Gln Phe Val Ile Pro Asp Leu Ser Pro Lys Asn
65                  70                  75                  80
Lys Ser Tyr Cys Gly Thr Gln Ser Glu Tyr Lys Pro Pro Ile Tyr His
                85                  90                  95
Phe Tyr Ser His Ile Val Ser Asn Asp Thr Thr Val Ile Val Lys Asn
            100                 105                 110
Gln Pro Val Asn Tyr Ser Phe Ser Cys Thr Tyr His Ser Thr Tyr Leu
        115                 120                 125
Val Asn Gln Ala Ala Phe Asp Gln Arg Val Ala Thr Val His Val Lys
    130                 135                 140
Asn Gly Ser Met Gly Thr Phe Glu Ser Gln Leu Ser Leu Asn Phe Tyr
145                 150                 155                 160
Thr Asn Ala Lys Phe Ser Ile Lys Lys Glu Ala Pro Phe Val Leu Glu
                165                 170                 175
```

```
Ala Ser Glu Ile Gly Ser Asp Leu Phe Ala Gly Val Glu Ala Lys Gly
            180                 185                 190
Leu Ser Ile Arg Phe Lys Val Val Leu Asn Ser Cys Trp Ala Thr Pro
        195                 200                 205
Ser Ala Asp Phe Met Tyr Pro Leu Gln Trp Gln Leu Ile Asn Lys Gly
    210                 215                 220
Cys Pro Thr Asp Glu Thr Val Leu Val His Glu Asn Gly Arg Asp His
225                 230                 235                 240
Arg Ala Thr Phe Gln Phe Asn Ala Phe Arg Phe Gln Asn Ile Pro Lys
                245                 250                 255
Leu Ser Lys Val Trp Leu His Cys Glu Thr Phe Ile Cys Asp Ser Glu
            260                 265                 270
Lys Leu Ser Cys Pro Val Thr Cys Asp Lys Arg Lys Arg Leu Leu Arg
        275                 280                 285
Asp Gln Thr Gly Gly Val Leu Val Val Glu Leu Ser Leu Arg Ser Arg
    290                 295                 300
Gly Phe Ser Ser Leu Tyr Ser Phe Ser Asp Val Leu His His Leu Ile
305                 310                 315                 320
Met Met Leu Gly Ile Cys Ala Val Leu
                325
```

<210> 36
<211> 232
<212> PRT
<213> Homo sapiens

<400> 36

```
Met Leu Tyr Thr Arg Lys Asn Leu Thr Cys Ala Gln Thr Ile Asn Ser
 1               5                  10                  15
Ser Ala Phe Gly Asn Leu Asn Val Thr Lys Lys Thr Thr Phe Ile Val
            20                  25                  30
His Gly Phe Arg Pro Thr Gly Ser Pro Pro Val Trp Met Asp Asp Leu
        35                  40                  45
Val Lys Gly Leu Leu Ser Val Glu Asp Met Asn Val Val Val Val Asp
    50                  55                  60
Trp Asn Arg Gly Ala Thr Thr Leu Ile Tyr Thr His Ala Ser Ser Lys
65                  70                  75                  80
Thr Arg Lys Val Ala Met Val Leu Lys Glu Phe Ile Asp Gln Met Leu
                85                  90                  95
```

```
Ala Glu Gly Ala Ser Leu Asp Asp Ile Tyr Met Ile Gly Val Ser Leu
            100                 105                 110
Gly Ala His Ile Ser Gly Phe Val Gly Glu Met Tyr Asp Gly Trp Leu
        115                 120                 125
Gly Arg Ile Thr Gly Leu Asp Pro Ala Gly Pro Leu Phe Asn Gly Lys
    130                 135                 140
Pro His Gln Asp Arg Leu Asp Pro Ser Asp Ala Gln Phe Val Asp Val
145                 150                 155                 160
Ile His Ser Asp Thr Asp Gly Asn Ala Pro Phe Leu Val Ala Leu Gly
                165                 170                 175
Tyr Lys Glu Pro Leu Gly Asn Ile Asp Phe Tyr Pro Asn Gly Gly Leu
            180                 185                 190
Asp Gln Pro Gly Cys Pro Lys Thr Ile Leu Gly Gly Asn Val Lys Glu
        195                 200                 205
Met Ile Gln Ala Ser Tyr Ile Phe Phe Leu Lys Asn Asp Ser Met Asp
    210                 215                 220
Leu Ser Ser Pro Lys Glu Val Glu
225                 230
```

<210> 37
<211> 452
<212> PRT
<213> Homo sapiens

<400> 37

```
Met Leu Arg Phe Tyr Leu Phe Ile Ser Leu Leu Cys Leu Ser Arg Ser
 1               5                  10                  15
Asp Ala Glu Glu Thr Cys Pro Ser Phe Thr Arg Leu Ser Phe His Ser
            20                  25                  30
Ala Val Val Gly Thr Gly Leu Asn Val Arg Leu Met Leu Tyr Thr Arg
        35                  40                  45
Lys Asn Leu Thr Cys Ala Gln Thr Ile Asn Ser Ser Ala Phe Gly Asn
    50                  55                  60
Leu Asn Val Thr Lys Lys Thr Thr Phe Ile Val His Gly Phe Arg Pro
65                  70                  75                  80
Thr Gly Ser Pro Pro Val Trp Met Asp Asp Leu Val Lys Gly Leu Leu
                85                  90                  95
Ser Val Glu Asp Met Asn Val Val Val Val Asp Trp Asn Arg Gly Ala
            100                 105                 110
```

```
Thr Thr Leu Ile Tyr Thr His Ala Ser Ser Lys Thr Arg Lys Val Ala
        115                 120                 125
Met Val Leu Lys Glu Phe Ile Asp Gln Met Leu Ala Glu Gly Ala Ser
    130                 135                 140
Leu Asp Asp Ile Tyr Met Ile Gly Val Ser Leu Gly Ala His Ile Ser
145                 150                 155                 160
Gly Phe Val Gly Glu Met Tyr Asp Gly Trp Leu Gly Arg Ile Thr Gly
                165                 170                 175
Leu Asp Pro Ala Gly Pro Leu Phe Asn Gly Lys Pro His Gln Asp Arg
            180                 185                 190
Leu Asp Pro Ser Asp Ala Gln Phe Val Asp Val Ile His Ser Asp Thr
        195                 200                 205
Asp Ala Leu Gly Tyr Lys Glu Pro Leu Gly Asn Ile Asp Phe Tyr Pro
    210                 215                 220
Asn Gly Gly Leu Asp Gln Pro Gly Cys Pro Lys Thr Ile Leu Gly Gly
225                 230                 235                 240
Phe Gln Tyr Phe Lys Cys Asp His Gln Arg Ser Val Tyr Leu Tyr Leu
                245                 250                 255
Ser Ser Leu Arg Glu Ser Cys Thr Ile Thr Ala Tyr Pro Cys Asp Ser
            260                 265                 270
Tyr Gln Asp Tyr Arg Asn Gly Lys Cys Val Ser Cys Gly Thr Ser Gln
        275                 280                 285
Lys Glu Ser Cys Pro Leu Leu Gly Tyr Tyr Ala Asp Asn Trp Lys Asp
    290                 295                 300
His Leu Arg Gly Lys Asp Pro Pro Met Thr Lys Ala Phe Phe Asp Thr
305                 310                 315                 320
Ala Glu Glu Ser Pro Phe Cys Met Tyr His Tyr Phe Val Asp Ile Ile
                325                 330                 335
Thr Trp Asp Lys Asn Val Arg Arg Gly Asp Ile Thr Ile Lys Leu Arg
            340                 345                 350
Asp Lys Ala Gly Asn Thr His Arg Ser Lys Ile Ile Ser Asn Glu Pro
        355                 360                 365
Thr Thr Phe Gln Lys Tyr His Gln Val Ser Leu Leu Ala Arg Phe Asn
    370                 375                 380
Gln Asp Leu Asp Lys Val Ala Ala Ile Ser Leu Met Phe Ser Thr Gly
385                 390                 395                 400
Ser Leu Ile Gly Pro Arg Tyr Lys Leu Arg Ile Leu Arg Met Lys Leu
                405                 410                 415
Arg Ser Leu Ala His Pro Glu Arg Pro Gln Leu Cys Arg Tyr Asp Leu
            420                 425                 430
```

Val Leu Met Glu Asn Val Glu Thr Val Phe Gln Pro Ile Leu Cys Pro
435 440 445
Glu Leu Gln Leu
450

<210> 38
<211> 450
<212> PRT
<213> Homo sapiens

<400> 38
Met Gly Leu Arg Ser His His Leu Ser Leu Gly Leu Leu Leu Leu Phe
1 5 10 15
Leu Leu Pro Ala Glu Cys Leu Gly Ala Glu Gly Arg Leu Ala Leu Lys
20 25 30
Leu Phe Arg Asp Leu Phe Ala Asn Tyr Thr Ser Ala Leu Arg Pro Val
35 40 45
Ala Asp Thr Asp Gln Thr Leu Asn Val Thr Leu Glu Val Thr Leu Ser
50 55 60
Gln Ile Ile Asp Met Asp Glu Arg Asn Gln Val Leu Thr Leu Tyr Leu
65 70 75 80
Trp Ile Arg Gln Glu Trp Thr Asp Ala Tyr Leu Arg Trp Asp Pro Asn
85 90 95
Ala Tyr Gly Gly Leu Asp Ala Ile Arg Ile Pro Ser Ser Leu Val Trp
100 105 110
Arg Pro Asp Ile Val Leu Tyr Asn Lys Ala Asp Ala Gln Pro Pro Gly
115 120 125
Ser Ala Ser Thr Asn Val Val Leu Arg His Asp Gly Ala Val Arg Trp
130 135 140
Asp Ala Pro Ala Ile Thr Arg Ser Ser Cys Arg Val Asp Val Ala Ala
145 150 155 160
Phe Pro Phe Asp Ala Gln His Cys Gly Leu Thr Phe Gly Ser Trp Thr
165 170 175
His Gly Gly His Gln Leu Asp Val Arg Pro Arg Gly Ala Ala Ala Ser
180 185 190
Leu Ala Asp Phe Val Glu Asn Val Glu Trp Arg Val Leu Gly Met Pro
195 200 205
Ala Arg Arg Arg Val Leu Thr Tyr Gly Cys Cys Ser Glu Pro Tyr Pro
210 215 220

```
Asp Val Thr Phe Thr Leu Leu Leu Arg Arg Arg Ala Ala Ala Tyr Val
225                 230                 235                 240
Cys Asn Leu Leu Leu Pro Cys Val Leu Ile Ser Leu Leu Ala Pro Leu
                245                 250                 255
Ala Phe His Leu Pro Ala Asp Ser Gly Glu Lys Val Ser Leu Gly Val
            260                 265                 270
Thr Val Leu Leu Ala Leu Thr Val Phe Gln Leu Leu Leu Ala Glu Ser
        275                 280                 285
Met Pro Pro Ala Glu Ser Val Pro Leu Ile Gly Lys Tyr Tyr Met Ala
    290                 295                 300
Thr Met Thr Met Val Thr Phe Ser Thr Ala Leu Thr Ile Leu Ile Met
305                 310                 315                 320
Asn Leu His Tyr Cys Gly Pro Ser Val Arg Pro Val Pro Ala Trp Ala
                325                 330                 335
Arg Ala Leu Leu Leu Gly His Leu Ala Arg Gly Leu Cys Val Arg Glu
            340                 345                 350
Arg Gly Glu Pro Cys Gly Gln Ser Arg Pro Pro Glu Leu Ser Pro Ser
        355                 360                 365
Pro Gln Ser Pro Glu Gly Gly Ala Gly Pro Pro Ala Gly Pro Cys His
    370                 375                 380
Glu Pro Arg Cys Leu Cys Arg Gln Glu Ala Leu Leu His His Val Ala
385                 390                 395                 400
Thr Ile Ala Asn Thr Phe Arg Ser His Arg Ala Ala Gln Arg Cys His
                405                 410                 415
Glu Asp Trp Lys Arg Leu Ala Arg Val Met Asp Arg Phe Phe Leu Ala
            420                 425                 430
Ile Phe Phe Ser Met Ala Leu Val Met Ser Leu Leu Val Leu Val Gln
        435                 440                 445
Ala Leu
    450
```

<210> 39
<211> 255
<212> PRT
<213> Homo sapiens

<400> 39

```
Met Val Lys Gly Glu Lys Gly Pro Lys Gly Lys Lys Ile Thr Leu Lys
 1               5                  10                  15
```

Val Ala Arg Asn Cys Ile Lys Ile Thr Phe Asp Gly Lys Lys Arg Leu
20 25 30
Asp Leu Ser Lys Met Gly Ile Thr Thr Phe Pro Lys Cys Ile Leu Arg
35 40 45
Leu Ser Asp Met Asp Glu Leu Asp Leu Ser Arg Asn Leu Ile Arg Lys
50 55 60
Ile Pro Asp Ser Ile Ser Lys Phe Gln Asn Leu Arg Trp Leu Asp Leu
65 70 75 80
His Ser Asn Tyr Ile Asp Lys Leu Pro Glu Ser Ile Gly Gln Met Thr
85 90 95
Ser Leu Leu Tyr Leu Asn Val Ser Asn Asn Arg Leu Thr Ser Asn Gly
100 105 110
Leu Pro Val Glu Leu Lys Gln Leu Lys Asn Ile Arg Ala Val Asn Leu
115 120 125
Gly Leu Asn His Leu Asp Ser Val Pro Thr Thr Leu Gly Ala Leu Lys
130 135 140
Glu Leu His Glu Val Gly Leu His Asp Asn Leu Leu Asn Asn Ile Pro
145 150 155 160
Val Ser Ile Ser Lys Leu Pro Lys Leu Lys Lys Leu Asn Ile Lys Arg
165 170 175
Asn Pro Phe Pro Lys Pro Gly Glu Ser Glu Ile Phe Ile Asp Ser Ile
180 185 190
Arg Arg Leu Glu Asn Leu Tyr Val Val Glu Glu Lys Asp Leu Cys Ala
195 200 205
Ala Cys Leu Arg Lys Cys Gln Asn Ala Arg Asp Asn Leu Asn Arg Ile
210 215 220
Lys Asn Met Ala Thr Thr Thr Pro Arg Lys Thr Ile Phe Pro Asn Leu
225 230 235 240
Ile Ser Pro Asn Ser Met Ala Lys Asp Ser Trp Glu Asp Trp Arg
245 250 255

<210> 40
<211> 214
<212> PRT
<213> Homo sapiens

<400> 40
Met Gln Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln Arg
1 5 10 15

```
Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln Pro
            20                  25                  30
Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr Lys
        35                  40                  45
Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly Thr
    50                  55                  60
Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln Glu
65                  70                  75                  80
Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser Glu
                85                  90                  95
Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile Asp
            100                 105                 110
Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val Ile
        115                 120                 125
Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn Val
    130                 135                 140
Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile Asn
145                 150                 155                 160
Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg Ala
                165                 170                 175
Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val Ala
            180                 185                 190
Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu Glu
        195                 200                 205
Arg Cys Val Glu Ile Pro
    210
```

<210> 41
<211> 231
<212> PRT
<213> Homo sapiens

<400> 41

```
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
 1               5                  10                  15
Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
            20                  25                  30
Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
        35                  40                  45
```

```
Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
    50                  55                  60
Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
65                  70                  75                  80
Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                85                  90                  95
Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110
Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125
Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140
Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160
Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175
Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190
Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205
Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220
Glu Arg Cys Val Glu Ile Pro
225                 230
```

<210> 42
<211> 263
<212> PRT
<213> Homo sapiens

<400> 42

```
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
 1               5                  10                  15
Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
            20                  25                  30
Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
        35                  40                  45
Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
    50                  55                  60
```

```
Lys Ile Met Phe Ser Cys Ser Met Lys Ser Ser His Gln Lys Pro Ser
65                  70                  75                  80
Gly Cys Trp Gln His Ile Ser Cys Asn Phe Pro Gly Cys Arg Thr Leu
                85                  90                  95
Ala Lys Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
            100                 105                 110
Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
        115                 120                 125
Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
    130                 135                 140
Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
145                 150                 155                 160
Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
                165                 170                 175
Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
            180                 185                 190
Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
        195                 200                 205
Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
    210                 215                 220
Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
225                 230                 235                 240
Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
                245                 250                 255
Glu Arg Cys Val Glu Ile Pro
            260
```

<210> 43
<211> 259
<212> PRT
<213> Homo sapiens

<400> 43

```
Met Tyr Val Leu Ser Pro Val Glu Phe Ile Ile Leu Gln Leu Leu Phe
 1               5                  10                  15
Ile Gln Ala Ile Ser Ser Ser Leu Lys Gly Phe Leu Ser Ala Met Arg
            20                  25                  30
Leu Ala His Arg Gly Cys Asn Val Asp Thr Pro Val Ser Thr Leu Thr
        35                  40                  45
```

```
Pro Val Lys Thr Ser Glu Phe Glu Asn Phe Lys Thr Lys Met Val Ile
    50                  55                  60
Thr Ser Lys Lys Asp Tyr Pro Leu Ser Lys Asn Phe Pro Tyr Ser Leu
65                  70                  75                  80
Glu His Leu Gln Thr Ser Tyr Cys Gly Leu Val Arg Val Asp Met Arg
                85                  90                  95
Met Leu Cys Leu Lys Ser Leu Arg Lys Leu Asp Leu Ser His Asn His
            100                 105                 110
Ile Lys Lys Leu Pro Ala Thr Ile Gly Asp Leu Ile His Leu Gln Glu
        115                 120                 125
Leu Asn Leu Asn Asp Asn His Leu Glu Ser Phe Ser Val Ala Leu Cys
    130                 135                 140
His Ser Thr Leu Gln Lys Ser Leu Arg Ser Leu Asp Leu Ser Lys Asn
145                 150                 155                 160
Lys Ile Lys Ala Leu Pro Val Gln Phe Cys Gln Leu Gln Glu Leu Lys
                165                 170                 175
Asn Leu Lys Leu Asp Asp Asn Glu Leu Ile Gln Phe Pro Cys Lys Ile
            180                 185                 190
Gly Gln Leu Ile Asn Leu Arg Phe Leu Ser Ala Ala Arg Asn Lys Leu
        195                 200                 205
Pro Phe Leu Pro Ser Glu Phe Arg Asn Leu Ser Leu Glu Tyr Leu Asp
    210                 215                 220
Leu Phe Gly Asn Thr Phe Glu Gln Pro Lys Val Leu Pro Val Ile Lys
225                 230                 235                 240
Leu Gln Ala Pro Leu Thr Leu Leu Glu Ser Ser Ala Arg Thr Ile Leu
                245                 250                 255
His Asn Arg
```

<210> 44
<211> 416
<212> PRT
<213> Homo sapiens

<400> 44

```
Met Lys Leu His Cys Glu Val Glu Val Ile Ser Arg His Leu Pro Ala
 1               5                  10                  15
Leu Gly Leu Arg Asn Arg Gly Lys Gly Val Arg Ala Val Leu Ser Leu
            20                  25                  30
```

Cys Gln Gln Thr Ser Arg Ser Gln Pro Pro Val Arg Ala Phe Leu Leu
35 40 45
Ile Ser Thr Leu Lys Asp Lys Arg Gly Thr Arg Tyr Glu Leu Arg Glu
50 55 60
Asn Ile Glu Gln Phe Phe Thr Lys Phe Val Asp Glu Gly Lys Ala Thr
65 70 75 80
Val Arg Leu Lys Glu Pro Pro Val Asp Ile Cys Leu Ser Lys Ala Ile
85 90 95
Ser Ser Ser Leu Lys Gly Phe Leu Ser Ala Met Arg Leu Ala His Arg
100 105 110
Gly Cys Asn Val Asp Thr Pro Val Ser Thr Leu Thr Pro Val Lys Thr
115 120 125
Ser Glu Phe Glu Asn Phe Lys Thr Lys Met Val Ile Thr Ser Lys Lys
130 135 140
Asp Tyr Pro Leu Ser Lys Asn Phe Pro Tyr Ser Leu Glu His Leu Gln
145 150 155 160
Thr Ser Tyr Cys Gly Leu Val Arg Val Asp Met Arg Met Leu Cys Leu
165 170 175
Lys Ser Leu Arg Lys Leu Asp Leu Ser His Asn His Ile Lys Lys Leu
180 185 190
Pro Ala Thr Ile Gly Asp Leu Ile His Leu Gln Glu Leu Asn Leu Asn
195 200 205
Asp Asn His Leu Glu Ser Phe Ser Val Ala Leu Cys His Ser Thr Leu
210 215 220
Gln Lys Ser Leu Arg Ser Leu Asp Leu Ser Lys Asn Lys Ile Lys Ala
225 230 235 240
Leu Pro Val Gln Phe Cys Gln Leu Gln Glu Leu Lys Asn Leu Lys Leu
245 250 255
Asp Asp Asn Glu Leu Ile Gln Phe Pro Cys Lys Ile Gly Gln Leu Ile
260 265 270
Asn Leu Arg Phe Leu Ser Ala Ala Arg Asn Lys Leu Pro Phe Leu Pro
275 280 285
Ser Glu Phe Arg Asn Leu Ser Leu Glu Tyr Leu Asp Leu Phe Gly Asn
290 295 300
Thr Phe Glu Gln Pro Lys Val Leu Pro Val Ile Lys Leu Gln Ala Pro
305 310 315 320
Leu Thr Leu Leu Glu Ser Ser Ala Arg Thr Ile Leu His Asn Arg Asn
325 330 335
Arg Ile Pro Tyr Gly Ser His Ile Ile Pro Phe His Leu Cys Gln Asp
340 345 350

```
Leu Asp Thr Ala Lys Ile Cys Val Cys Gly Arg Phe Cys Leu Asn Ser
        355                 360                 365
Phe Ile Gln Gly Thr Thr Thr Met Asn Leu His Ser Val Ala His Thr
    370                 375                 380
Val Val Leu Val Asp Asn Leu Gly Gly Thr Glu Ala Pro Ile Ile Ser
385                 390                 395                 400
Tyr Phe Cys Ser Leu Gly Cys Tyr Val Asn Ser Ser Asp Met Leu Lys
                405                 410                 415
```

<210> 45
<211> 990
<212> DNA
<213> Mus musculus

<400> 45

```
atggtggtca gggccttcgt tttgctggcc ctctttgcag aagcctcagc gaaatcatgc 60
actccgaata aagcagatgt catccttgtg ttttgttatc ccaagaccat catcactaaa 120
atccccgagt gtccctatgg atgggaagta caccagctgg cactcggggg gctgtgttac 180
aacggggtcc atgaaggtgg ctattaccag tttgtcatcc ctgatctgtc acctaagaac 240
aagtcctact gcggaaccca gtcagagtac aagcccccca tctaccactt ctacagccac 300
atcgtgtcca acgacagcac agtgatcgtg aagaaccagc ccgtcaacta ctccttctcc 360
tgcacctacc actccaccta cttggtgaac caggctgctt ttgaccagag agtggccact 420
gttcacgtca agaacgggag catgggcaca tttgaaagcc agttgtccct caacttctac 480
actaatgcca agttttccac caaaaaagaa gctcccttcg ttctggaaac gtccgaaatc 540
ggctcagatc tgtttgcggg agtagaagcc aaaggcctaa gcgttcggtt caaagtggtc 600
ttgaatagct gctgggccac cccctcggct gacttcatgt acccccttaca gtggcagctc 660
atcaataagg gctgccccac cgatgagaca gtcctcgtgc atgagaacgg caaagaccac 720
agggccactt tccaattcaa tgccttccgg ttccagaaca tccccaaact ttccaaggtt 780
tggttacact gtgagacgtt catctgcgac agtgagaagc tctcctgccc cgtgaactgt 840
gacaaacgga agcgcatgct acgtgaccag acaggaggtg tcctggttgt ggagttgtcc 900
ctgaggagca gggcattttc cggcctctgt gacttctcag atgttcttct tcacctcatc 960
ctgatgctgg ggacctgggc tgtgttgtag                                  990
```

<210> 46
<211> 329
<212> PRT
<213> Mus musculus

<400> 46

Met Val Val Arg Ala Phe Val Leu Leu Ala Leu Phe Ala Glu Ala Ser
1 5 10 15
Ala Lys Ser Cys Thr Pro Asn Lys Ala Asp Val Ile Leu Val Phe Cys
20 25 30
Tyr Pro Lys Thr Ile Ile Thr Lys Ile Pro Glu Cys Pro Tyr Gly Trp
35 40 45
Glu Val His Gln Leu Ala Leu Gly Gly Leu Cys Tyr Asn Gly Val His
50 55 60
Glu Gly Gly Tyr Tyr Gln Phe Val Ile Pro Asp Leu Ser Pro Lys Asn
65 70 75 80
Lys Ser Tyr Cys Gly Thr Gln Ser Glu Tyr Lys Pro Pro Ile Tyr His
85 90 95
Phe Tyr Ser His Ile Val Ser Asn Asp Ser Thr Val Ile Val Lys Asn
100 105 110
Gln Pro Val Asn Tyr Ser Phe Ser Cys Thr Tyr His Ser Thr Tyr Leu
115 120 125
Val Asn Gln Ala Ala Phe Asp Gln Arg Val Ala Thr Val His Val Lys
130 135 140
Asn Gly Ser Met Gly Thr Phe Glu Ser Gln Leu Ser Leu Asn Phe Tyr
145 150 155 160
Thr Asn Ala Lys Phe Ser Thr Lys Lys Glu Ala Pro Phe Val Leu Glu
165 170 175
Thr Ser Glu Ile Gly Ser Asp Leu Phe Ala Gly Val Glu Ala Lys Gly
180 185 190
Leu Ser Val Arg Phe Lys Val Val Leu Asn Ser Cys Trp Ala Thr Pro
195 200 205
Ser Ala Asp Phe Met Tyr Pro Leu Gln Trp Gln Leu Ile Asn Lys Gly
210 215 220
Cys Pro Thr Asp Glu Thr Val Leu Val His Glu Asn Gly Lys Asp His
225 230 235 240
Arg Ala Thr Phe Gln Phe Asn Ala Phe Arg Phe Gln Asn Ile Pro Lys
245 250 255
Leu Ser Lys Val Trp Leu His Cys Glu Thr Phe Ile Cys Asp Ser Glu
260 265 270
Lys Leu Ser Cys Pro Val Asn Cys Asp Lys Arg Lys Arg Met Leu Arg
275 280 285
Asp Gln Thr Gly Gly Val Leu Val Val Glu Leu Ser Leu Arg Ser Arg
290 295 300
Ala Phe Ser Gly Leu Cys Asp Phe Ser Asp Val Leu Leu His Leu Ile
305 310 315 320

Leu Met Leu Gly Thr Trp Ala Val Leu
325